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Educational News and Editorial Comment

THE UNIVERSITY OF CHICAGO DINNER

The annual dinner of the University of Chicago which occurs during the week of the meeting of the Department of Superintendence will be held at the Twentieth Century Club, Boston, Massachusetts, Wednesday, February 29, 1928. Tickets may be secured from William S. Gray, University of Chicago, for $2.00 each. All alumni and former students of the University are cordially invited to attend.

THE HISTORY OF THE McGUFFEY READERS

The *Saturday Evening Post* of November 26, 1927, gives an example of the way in which the history of education may be written so that it will be read by the ordinary citizen. It is something of a reproof to the technical students of the history of education that they have left it to an interested magazine writer to gather information about one of the most influential series of textbooks ever prepared for American schools.

The methods used by McGuffey in preparing his primer are described as follows:

> Always a lover of children, he gathered his own swarm and the children of the settlers around Oxford in his home or in its back yard, which extended into

the beautiful forest that still occupies part of the campus of the university, and tried out his theories.

Much of his experimenting in child psychology was done outdoors, at the edge of the woods, where the trees were being felled for building purposes and to supply firewood. He had a log for reading, a log for spelling, a log for arithmetic, a log for grammar. The children, on fine days, were ranged on the logs, and the highest honor was to hold the big end of a log against all challengers. His plan of sending the child who was best prepared in the lesson to the big end of the log put the element of competition into the classes, and he was using, there in the backwoods one hundred years ago, just the system our advanced kindergartners now use and ascribe to foreigners.

McGuffey was making up his books as he went along. Each day he arranged the children in age groups, tested their capacity to learn by his prepared lessons, and, making notes and observations, he changed them day by day, codifying the lessons until he could take children step by step up the rough path of education. In that manner his primer was evolved first.

After the primer was completed, plans for the publication of a series of readers developed as indicated in the following paragraphs.

Early in 1836 McGuffey, fully realizing the necessity of proper and uniform textbooks, came into contact with Truman and Smith, publishers in Cincinnati, who a year before had printed Ray's Arithmetic. Whether McGuffey took his assembled and graded readers to them or whether they sought him out as the proper person to prepare such books is unknown. The publishers' heirs later claimed that they solicited McGuffey and outlined the plan. At any rate, on April 28, 1836, he made a contract with the Cincinnati firm to prepare four readers, to be completed within eighteen months. It is significant that the first and second readers were then ready in manuscript. Dr. Benjamin Chidlaw, then a student, contracted to help McGuffey complete the third and fourth readers, receiving five dollars. McGuffey was to receive 10 per cent royalty until the sum reached $1,000, after which the books became the property of the publishers. These four comprised the original Eclectic Series.

It is estimated that in the next fifty years between 80,000,000 and 90,000,000 of the books were sold, and after the Civil War the publishers voluntarily paid McGuffey an annuity for the use of his name. At one time more than half the school children of the United States used his books.

SUPERINTENDENT McANDREW AND THE BOARD OF EDUCATION OF CHICAGO

On November 23, when it had become apparent to everyone that the Board of Education of Chicago was making the trial of Superintendent William McAndrew an opportunity for conducting a political campaign, he asked permission to file a notice of withdrawal

so far as his personal attendance at the hearings was concerned. The board refused to listen to his statement. The next morning the newspapers printed it in full. It is so admirable a document and so cogent an answer to the charges made by the board that it deserves all the publicity which can be given to it. It is as follows:

It is now nearly three months since your president and five members voted to charge me with insubordination and improper conduct in having entered into an unlawful confederacy with certain employees of the board, designated as "extra teachers."

These teachers were doing the work assigned them under an order of the board recommended years ago by a former superintendent, Mrs. Ella Flagg Young. I believed that these teachers were essential agencies for the efficient conduct of the schools, and I did not assist the attorney of the board to carry out the design of a majority of the board to supplant them by political appointees.

It is now seven months since the new mayor in his official inaugural address declared his intention, though he has no proper jurisdiction over the schools, to proceed to oust the superintendent.

I have, week after week, presented myself for a trial upon the above charges, which has been denied me. Instead, you have entertained various paid patriots, who have complained of the nature of the various textbooks in use in the schools of America adopted for Chicago by the board of education before I became superintendent, re-adopted by the board on recommendation of your own teachers after I became superintendent, books examined by your own president and reported by him as unobjectionable, books referred to a committee of your board which failed to report them as objectionable.

Instead of trying me on the alleged misdemeanor for which I was suspended, you have permitted to be added a host of irrelevant allegations. Of these sixteen charges, No. 3, concerning the English Speaking Union and alleging its misdemeanors, refers to an organization of which I am not and never was a member, and with which I never had any dealings here or elsewhere.

Charge 5 is against the University of Chicago, with which I have no connection and whose courses had been taken by your teachers long before my connection with your system.

Charge 12, an allegation of obligation to publishers of textbooks because I edited the *Educational Review*, aims to inject impropriety into a service given by school men generally and in this case never involving textbooks at all.

Charges 1 and 2 concern history textbooks; Charge 4, opposition to use of the schools for making collections of money from children; Charge 6, nomination of some examiner in place of Examiner Campbell; Charge 7, opposing the dismissal of children in school hours to make way for teachers' meetings; Charge 8, failure to favor Mr. Coath's attacks on one teacher's textbook while over a hundred others were retained by the board; Charge 9, failure to indorse the views of a minority of the board regarding the transfer of a teacher; Charges

10 and 11, serving teachers' institutes outside of Chicago, which is expected of superintendents generally and was authorized by your three preceding presidents; Charge 13, testing the work of the schools; Charge 14, failure to respect ideas advocated by some members of the board of education; Charge 15, recommending the improper appointment of school employees; and Charge 16, delay in the execution of the board of education's orders.

All these are instances of acts of the board of education itself as organized before the election of the present president. Their decisions contrary to his desires are, now that he is able to command a majority of one vote, cited as misdemeanors of a superintendent of schools, as if the superintendent "by insolence and contempt toward the board and the entire proceedings," as the charges say, had been able to deprive the board members of their exercise of judgment and their ability to reach a decision.

The repeated published assertion of your president that he will put the superintendent out; the degradation of your school system in the eyes of the entire country by editorial condemnation of this trial as a farce and vaudeville; the cloud of aspersion you permit to remain upon your best teachers that they recommended to the superintendent the adoption of poisoned books; the effect on your school children of the continued newspaper characterization of your proceedings as a travesty on justice; the repeated and uncontradicted editorial designation of this trial as before a packed jury and an admittedly prejudiced judge, all lead me to desire to escape being a party to the continuance of what is almost universally regarded as a burlesque.

I therefore respectfully decline further to attend personally these hearings until notified by my counsel to appear in defense of the charges on which I was suspended, when, if ever, you address yourselves to them.

THIRD MID-WEST CONFERENCE ON CHILD STUDY AND PARENT EDUCATION

On February 16–18 there will be held at the Palmer House in Chicago a conference of parents for the consideration of problems of child-training. Similar conferences held in 1926 and 1927 were very successful. The central topic this year will be character development. Information and programs may be obtained from the office of the Chicago Association for Child Study and Parent Education, 537 South Dearborn Street, Chicago.

EDUCATION FOR CHILDREN CONFINED AT HOME

The following statement was recently published by the *Christian Science Monitor*.

Dayton has taken a position of leadership in carrying public-school teaching to children confined to their homes or institutions. Instruction is given to nearly one hundred youths. The work is planned on the theory that the children will eventually be able to return to their regular classrooms.

Requirements for the city schools are taken as a basis for home instruction, and allowances are made to fit conditions in special cases. Credits acquired in home instruction are usable in local schools and, it follows, are good in any college that accredits Dayton's high-school graduates. In a few cases where children from out of the city are brought into Dayton's institutions, their instruction has been designed to fit in with the school system to which they will eventually return. Thus far, none of the out-of-town schools have questioned the work done under extension teachers.

While the institutional program includes class work, at home the children are given individual attention. Five hours' work is given each child weekly, and instructors are paid for the actual time they are engaged.

There are advantages to home teaching as far as progress goes that to some extent counterbalance the handicaps. Children who receive home teaching are hampered by the fact that their weekly allotment of time is only a fifth of that given in the average classroom. On the other hand, they get personal attention, which is not available in a large classroom. Plans for future, aims, and ambitions are freely discussed with teachers.

It is notable that children who return to schools are able to take their places beside those whose fortunes have allowed them to stay in classrooms. That is true in both grade and high schools, officials affirm.

Teachers who give home instruction must be more versatile than those in the schoolroom, it is pointed out. In the schoolroom specialists instruct in the various subjects, but at home one teacher must carry on the work in all lines.

While nothing can be done along the "frills" of the curricula by regular teachers, music and art have been carried to the children to some extent by members of the local staffs voluntarily making occasional visits. Children take great interest in such work.

HOW PRINCIPALS IN NEW YORK CITY RATE TEACHERS

The following statement is quoted from the *New York Sun*.

If the results shown in a statistical study of the semiannual ratings given the teachers in twenty schools in Districts 8 and 11, Manhattan, are any indication of conditions throughout the city, teachers here rank high in their "professional attitude" but low in their "personal attributes."

The study, made by Jacob Theobald, principal of P. S. 165, Manhattan, dealt with the well-known "Form 152," the general rating blank of all teachers, which must be filed with the record division of the board of education and with the district superintendents within five days of the close of each term. On this blank each principal is supposed to consider and rate the "exceptional" qualities of his or her teachers as well as their "special weaknesses."

Mr. Theobald tabulated all such citations given in twenty schools of the districts supervised by District Superintendent John E. Wade. Two schools reported no citations for any teacher. The remaining eighteen schools were productive of a total of more than 2,000 citations to 816 teachers.

"Co-operation" and "skill in teaching" were the "exceptional service" characteristics most frequently mentioned. The former quality was cited 236 times and the latter 205. "Personal appearance" and "self-control" are virtues most seldom worth mentioning, if Mr. Theobald's figures are indicative. Only twenty teachers received a citation in each of these qualities.

The following table gives the distribution of citations:

Character of Citation	Number
Professional attitude:	
A. Regularity of attendance and punctuality	62
B. Co-operation	236
C. Social service	58
D. Volunteer activities	122
E. Care of physical welfare of child	25
F. Loyalty	13
G. Self-improvement	50
Instruction:	
A. Use of English	48
B. Knowledge of subject matter	74
C. Skill in teaching	205
1. Preparation	75
2. Definiteness of aim	42
3. Appropriateness of aim	36
4. Good questioning	36
5. Thoroughness of drill	73
6. Participation and interest of class	70
Discipline:	
A. Control of class	138
B. Training pupils in self-control	73
C. Effect on attendance and truancy	34
D. Character-building	60
Personal attributes:	
A. Personal appearance	20
B. Use of voice	21
C. Cheerfulness	30
D. Courtesy	28
E. Self-control	20
F. Initiative and demonstrated leadership	35
G. Tact	38
H. Sympathy	41
Routine:	
A. Accuracy and promptness in preparing reports and in keeping records	90
B. Classroom administration	62

TEACHER-RATING IN THE UNITED STATES

In the *Yearbook of the National League of Teachers' Associations* for 1927 Katherine Morrison, of Minneapolis, Minnesota, summarizes the methods now used in rating teachers and comments on the inadequacies which a teacher finds in some of these methods.

Teachers are being rated and will continue to be rated. If you and I are not affected now, it is no guaranty of our exemption in the future. If rating must be done, we should be most keenly alert in making any contribution that will help to make the devices used as scientifically sound and as objective as possible.

If we object to rating, we should put ourselves in positions to argue logically to that end. The phrase, "I don't believe in rating," will not suffice.

A survey of rating was made in 1923 by a committee appointed by the Minneapolis Classroom Teachers' Association. This year a committee revised the work. It is interesting to note some of the changes in kinds and methods of rating and the attitude toward it in the past four years.

In regard to the attitude toward rating, it is very evident that those most interested see the need of rating scales being perfected and the whole thing being done on a more scientific basis.

There is the feeling that, since rating is theoretically good, it is worth the effort of solution, and, as one author said, "the solution can only come through the use of rating plans that we now have and the gradual evolution, through study, to means of rating that will be more objective."

The rating plans most frequently used may be grouped into three types: (1) score cards of teacher traits, (2) man-to-man comparison scales, (3) measurements of teaching efficiency based upon achievements. The score card contains a list of traits which are supposed to represent the qualities which make for success in teaching. The number of these terms varies from ten to fifty and frequently more, and what is interesting is that nine out of ten of them might well be applied to qualities that would make a good lawyer or a good minister. The truth is, teaching qualities have never been clearly determined.

Dr. Brueckner, director of instructional research in Minneapolis schools, suggests that we attack the problem by finding out what teachers are the most efficient and then, with the help of such teachers, study their work and find out just what qualities make them successful.

Reudiger contends that the scales fail to rate a teacher adequately because the supreme work of a teacher is quite often dependent on only one point of real excellence.

Be that as it may, qualities are listed. These traits arranged by Leroy A. King, of the University of Pennsylvania, in the order of their importance, according to the experience of ninety-two city superintendents are: (1) instructional skill or technique, (2) pupil achievement or teaching results, (3) initiative, (4) personal characteristics, (5) professional interest and growth, (6) discipline,

(7) lesson preparation, (8) scholarship and training, (9) leadership, (10) executive ability, (11) spirit of co-operation, (12) school management, (13) school activity.

Each of these terms has numerous subheads; for instance, in the rating plan for Philadelphia teachers we find the following items listed under "personality": (1) general bearing, (2) voice, (3) personal qualities. Under "personal qualities" we again have five subheads, namely, (*a*) sympathy, (*b*) enthusiasm, (*c*) culture, (*d*) reliability, (*e*) intelligence. Each of these in turn has from eight to ten subheads.

The man-to-man comparison scale is the application of the device originated by Walter Dill Scott. This was first used by him when he and several other eminent psychologists were employed by the United States government in 1918 to devise a means for rating prospective as well as commissioned officers.

In September, 1918, Rugg was invited to make a study of the plan with the view of determining its reliability. Following this study he decided it could be made applicable to teacher-rating and suggested that teachers be graded on these five qualities: (1) skill in teaching, (2) skill in mechanics of managing a class, (3) team-work qualities, (4) quality of growth and keeping up to date, (5) personal and social qualities.

With one of these qualities in mind the rater makes a list of twenty-five teachers he has known well, arranging them with the five best at the top of the list, the five poorest at the bottom, including in the five best the teacher who stands out, in his mind, as the best teacher he has known, as far as that particular quality is concerned, and using great care that all other qualities be ignored. Between the five best and the five poorest he writes the names of five teachers who would be ranked as average in that particular quality; above this central group he inserts the names of the five better than average and below this group the five who are poorer than average.

From these twenty-five, by the process of elimination, five teachers are selected who stand for the best teacher I have known, the poorest teacher I have ever known, the average, one above and one below average.

The teacher being rated is now assigned her value by comparing her with the scale teacher.

Any principal or supervisor would be handicapped in the use of this method unless his acquaintance with teachers was very broad.

This plan, together with the general-impression idea, is carried out in the rating plan of Detroit. Detroit has one of the most comprehensive rating plans of any city studied.

Although this plan is considered superior to the ordinary rating-card system, it resolves itself into a teacher being graded "excellent," "poor," or "average." These are objective terms.

The third type of rating is the rating of teaching, not teachers—the measuring of teaching efficiency based upon achievements of pupils. There seems to be a growing tendency to emphasize teaching results rather than personal traits.

In other words, "by their fruits ye shall know them." Much research is being done on this phase of rating as educators realize its present limitations and its future possibilities.

Tests have been devised whereby skills can be measured in the tool subjects. Here we find a pitfall, for, as soon as a teacher knows that her reputation as a teacher in large measure will be determined by pupil results, it is only reasonable to assume that stress will be laid on these subjects and the more intangible outcomes of pupil growth will be neglected.

Skills in reading, arithmetic, writing, language, and spelling are desirable, but is not the development of ideals equally important? We must guard against having our schools too highly standardized.

Many teachers base their objection to rating on this very reason. The matter-of-fact teacher may give children much that is measurable in book learning while another may be molding the coarser clays into those of finer grains, may be instilling traits of character that are of immeasurable value to the individual.

These last are the somewhat intangible results which teachers claim cannot be measured. Thorndike suggests that this argument against rating may be refuted by the old axiom that whatever exists in any quantity can be measured. I would like to add, "Yes, when reliable means of measuring are found." So far the only means of judging pupil reaction is by standard tests.

So many factors determine the results of tests that, unless the conditions of every teacher be made equal or at least comparable, the results should not be given much weight. Judgments should not be passed on any teacher's work unless the results of tests for determining her efficiency are considered over a period of years.

For children in homogeneous groups the factors that will cause diversity of results will be many, as difference in size of classes, difference in equipment, home environment, and previous training. For children in heterogeneous groups there would be many more variable factors.

To form a basis for judging skill in teaching, Courtis has divided teachers into four groups, according to the methods they use. These four vary from the old reactionary group, whom circumstances or environment lead to go in the ways of our forefathers and, judging by equipment furnished some teachers, it is the only legitimate course for them to follow, to the ideal method, classified as the purposing type.

With methods so diverse, it is hard for any person doing the rating to be unbiased, and Courtis has worked out descriptive lessons that may be used as a basis for rating the skills of teachers who use different methods. Again, the factor of discipline would enter in, and a supervisor leaning to the lock-step method of procedure might fail to notice much that was most commendable in the work of the motivating or purposing type of teacher; or, vice versa, a supervisor imbued with a keen sense of keeping up to date might fail to find anything of value in the work of a good teacher using a less up-to-date method.

Supervisors, enthusiastic over work they have seen, may ask teachers to adopt new methods without giving them time nor opportunity to secure the information necessary to carry out the plan successfully.

It takes good judgment and a keen sense of values for a teacher to keep her feet on the ground when lack of knowledge of a method and lack of equipment for that kind of teaching would make it folly to attempt it.

We find rating systems are quite generally used during the probationary period, and, as tenure laws are passed in different states, more attention is going to be given to rating teachers new to a system, and less stress will be laid on growth in service.

The pendulum has certainly swung, and God give the teachers strength to carry on until it swings back.

Such wan faces and tired bodies we see on the campus and in the classrooms of every college and university. The intricacies of psychology, the meticulous graphing of tests for measurement, the long hours of conscientious study, and to what end? If we could only keep a happy medium!

Drawing supervisors studying geography, kindergarten teachers studying trigonometry and calculus. It means three credits, six credits, the one hundred dollar bonus; why not? Then, too, they were the only subjects in the courses given in the afternoon at the library, and the university is so far out that it would mean returning at eleven o'clock and walking five blocks in the dark with the risk of being held up. It naturally resolved itself into geography and trigonometry.

According to the survey of thirty of the largest cities of the United States, seventeen reported having definite rating systems that affected promotions. In only seven of the thirty did the plan affect salaries. This means that in only 25 per cent of the cities studied ratings affected salaries.

This was an interesting discovery as the survey made in 1925 by Leroy A. King showed that forty-six out of seventy large cities, or over 60 per cent, had rating systems connected directly or indirectly with salary schedules. The evidence seems to be that single salaries are gaining in favor.

One superintendent, in reply to our question about rating determining salaries, said that he had never found any scheme worked out by which he could honestly say that one teacher was worth $120 a month and another $125.

Rugg says, "The unreliability of current typical rating of teachers by principals is so great that it is almost useless," and again, he says, "We cannot justify wasting the time of our school administrators and deluding our teachers with fictitious rating marks."

Another interesting development is the change in reasons given for having a rating system. Educators place more and more emphasis on its value in promoting teaching efficiency. According to the survey made by the Classroom Department of the National Education Association, the reasons for rating, in order of importance, as given by superintendents are: (1) improvement of teaching,

120; (2) basis for promotion, 60; (3) gives superintendents definite information, 36; (4) basis for eliminating the inefficient teacher, 28; (5) salary purposes, 21.

In some cities public sentiment seemed to demand it because rating is considered a sound business principle, and in other cities state laws require it.

Since the improvement of teachers heads the list of reasons for adopting rating plans, the Committee of One Hundred on Rating, of the National Education Association, concludes: "A teacher should be fully informed, in advance, upon beginning service in any school system, what requirements will enter into the estimation of his work and how the estimation of his work will be recorded. Results should be transmitted to the teacher rated in written form for his information and guidance."

We should bear in mind that the work of the appraiser is not easy. If all persons who help in rating could realize how grave their responsibility is, we would have less to fear.

As he takes his pen in hand to put down in black and white the merits and demerits of a teacher's work, to register her assets and liabilities, would that a "still small voice" could whisper the words of Portia when she faced Shylock: "Therefore, prepare thee to cut off the flesh. Shed thou no blood; nor cut thou less, nor more, but just a pound."

INCREASE IN PUBLIC KINDERGARTENS

The following paragraph and table appear in a bulletin prepared by Mary Dabney Davis and issued by the Bureau of Education under the title, *Nursery-Kindergarten-Primary Education in 1924–1926.*

During the past ten years there has been an increase of 14 per cent in the population of the United States. A 32.5 per cent growth in enrolment of kindergartens during the same period of years indicates growth in public interest in the education of four- and five-year-old children. The following table shows the total increase in the number of kindergartens and teachers, in enrolment, and in average daily attendance between the years 1914 and 1924. It also shows that private kindergartens are fewer in number and that there are more public kindergartens. This may be explained in part by the fact that many kindergartens organized and originally supported by philanthropic institutions have been taken over by the public-school system. Such a change from private to public control of kindergartens is normal and natural. Private funds are frequently spent to show the need of an educational movement and to demonstrate its value. Philanthropic organizations were the first to champion the kindergarten, to show the social and educational need for it, as well as to demonstrate the possible contribution it could make to general education. This type of private organization substitutes for the public school until popular opinion permits the use of public money for the support of the project. The following

figures indicate that public opinion has increasingly approved of kindergarten education during the past ten years.

KINDERGARTEN STATISTICS FOR 1914 AND 1924

Year	Kindergartens		Teachers		Pupils Enrolled		Average Daily Attendance	
	Private	Public	Private	Public	Private	Public	Private	Public
1914...	1,571	7,254	2,139	8,430	74,725	391,143	51,684	224,978
1924...	1,319	8,494	1,390	10,818	54,456	562,897	36,564	329,152

"ORGANIZED RESEARCH IN EDUCATION"

In a monograph of 222 pages published by the Bureau of Educational Research of Ohio State University and entitled *Organized Research in Education*, Harold B. Chapman has described the organization and activities of the bureaus in public-school systems and universities which are engaged in scientific studies in the field of education. He has classified the various types of bureaus and has discussed concrete examples of each type. He has pointed out the problems which these bureaus encounter and the kinds of work in which they are engaged.

The magnitude of the movement for the systematic evaluation of educational results and for the solution of educational problems by scientific methods is indicated by the summaries of chapters xv and xix. The summary of chapter xv is as follows:

> Bureaus of research are usually created by governing boards which are legally responsible to the institutions with which they are connected, whether they be public schools, universities, or teacher-training institutions. Few have been constituted by special legislative action.
>
> The most common title for the head of a research bureau is director. In nearly 20 per cent of the cities having research bureaus, however, the director is also an assistant superintendent.
>
> Practically all of the state and institutional research bureaus and 88 per cent of the city bureaus make recommendations as to policy, but the bureaus in the former group assume no responsibility for putting their recommendations into effect. Only one-sixth of the city bureaus for which returns were received are charged with the duty of carrying out approved policies which have been adopted upon their recommendation. Over one-half of them do have a limited amount of administrative responsibility for which provision is made through a special delegation of the superintendent's authority.

In the great majority of cases the working articulation between the bureau and other parts of the school system was found to be free. The only restrictions were those which courtesy and respect for the authority of the superintendent and the building principal impose.

Annual reports are made by all of the state bureaus, 66 per cent of the city bureaus, 56 per cent of the university bureaus, and 50 per cent of the bureaus in teacher-training institutions. Substantially the same order of frequency holds in the making of reports at the end of each project.

The summary of chapter xix is as follows:

Four hundred and forty-five projects received the attention of bureaus of research during 1924–25, of which number 321 were reported by city bureaus and 124 by higher bureaus. This was an average of 6.8 for each city bureau and 6.4 for each higher bureau. The projects considered by city bureaus were almost evenly distributed among four types as follows: administrative studies, efficiency studies, subject-matter studies, and other professional services. Forty-three per cent originated within the bureau and 39 per cent within the superintendent's office.

Projects considered by higher bureaus were about equally distributed among the following fields: administrative projects, educational programs, measurement and service, and other subjects not included in the foregoing. Fifty-six per cent originated within the bureau. In general, a larger proportion of completed projects was reported by city bureaus than by higher bureaus.

ARE AUTHORS' ROYALTIES UNEARNED INCOME?

A great deal of attention has been directed recently to the ruling of the Internal Revenue Bureau to the effect that the royalties which authors receive from the sale of their books are, under certain conditions, to be classed as unearned income. The income-tax rate on earned income is 25 per cent lower than the rate on unearned income. Since writers of textbooks and other educational books are affected by this ruling, the discussion of the question is of interest to the educational profession. The ruling in question reads in part as follows:

Where the royalties received by an author are derived either from the sale, leasing, or renting of the intellectual product, it is the opinion of this office that they are not paid for "personal services actually rendered" but are paid for the use or sale of property and do not come within the meaning of the term "earned income."

Intellectual products of an author who contracts, or is employed, to write articles or books at some time in the future for publishers, in a majority of cases, belong to the employer, and the author has no tangible or intangible property

rights in the published property. It is the opinion of this office that both the lump-sum amount and royalties paid in this class of cases are for "personal services actually rendered" and come within the term "earned income."

This ruling is based on Section 209 of the Revenue Act of 1926, as quoted in a letter from the assistant to the commissioner of internal revenue:

For the purpose of this section, the term "earned income" means wages, salaries, professional fees, and other amounts received as compensation for personal services actually rendered, but does not include that part of the compensation derived by the taxpayer for personal services rendered by him to a corporation which represents a distribution of earnings or profits rather than a reasonable allowance as compensation for the personal services actually rendered. In the case of a taxpayer engaged in a trade or business in which both personal services and capital are material income-producing factors, a reasonable allowance as compensation for the personal services actually rendered by the taxpayer, not in excess of 20 per centum of his share of the net profits of such trade or business, shall be considered as earned income.

An editorial in the *New York Times* comments as follows on this ruling:

The Internal Revenue Bureau apparently divides into three classes the product of pens: first, journalistic or other work paid for on a time or space basis; second, books contracted for in advance by publishers; third, books the right to publish which an author sells. The first two categories are deemed by the Treasury officials to represent work the income from which is earned. Income from the third is "unearned."

A strict construction of this ruling would seem to indicate that, if the author is paid a lump sum, instead of in proportion to sales, he has earned his income, whereas, if he waits for the accounting with his publishers, he has failed to earn his income.

It has always been the privilege of the Treasury Department to make cast-iron rulings interpreting the law. Those who have time and money may contest unfavorable decisions. But the mass of taxpayers, including the majority of authors, are unable to do so. Hence their only redress is to have the apparent injustice discussed.

It may be true that some authors do not deserve even what they earn. But the Treasury is taking upon itself the task of drawing fine distinctions which may be good law but which are bound to be unfair to the members of a supposedly honorable and usually underpaid profession.

The ruling is apparently based on a technical consideration. It will probably be difficult for the ordinary man to detect a fundamental distinction between the case in which an author writes a

book and then makes a contract with a publisher for its publication on a royalty basis and the case in which an author sells a book outright for a lump sum or writes a series of articles or a book under a contract.

The statute which has been quoted does not define specifically and in detail the meaning of the term "earned income." The phrase which is used to define earned income is "compensation for the personal services actually rendered," and the illustrations or examples given are wages, salaries, and professional fees. The Internal Revenue Bureau suggests two interpretations of the term in the statute.

The first interpretation defines earned income as "income derived by the taxpayer through his own individual efforts"; and the second, as income derived in those activities in which there is "a relation of employer and employee." It appears that the first of these interpretations is a broad one and is a more reasonable interpretation of the statute. The second interpretation is a narrow one and hardly seems to be in accord with a reasonable and common-sense interpretation of the law.

It is apparently on the basis of the second interpretation that an author's royalties are considered as unearned income because they are not derived from an activity in which the individual is an employee. It is to be hoped that authors will be able to secure a reconsideration of this ruling and a revision in the light of a broader interpretation of the law.

POSTCARDS PREPARED BY THE JUVENILE ART CLASS OF PROFESSOR CIZEK IN VIENNA

At the request of the Austrian Junior Red Cross, announcement is made of two sets of postcards which reproduce drawings made by children in the juvenile art class conducted by Professor Cizek, of Vienna. The price of each set of ten cards is 27 cents postpaid. Eleven sets will be sent for $2.70. If 500 sets are ordered, the price is 22 cents a set.

The address of the Austrian Junior Red Cross is Stubenring 1, Vienna I, Austria.

THE EFFECT OF HOMOGENEOUS CLASSIFICATION ON THE SCHOLASTIC ACHIEVEMENT OF BRIGHT PUPILS

J. T. WORLTON
Assistant Superintendent of Schools, Salt Lake City, Utah

It has become increasingly apparent since the technique of educational measurements became sufficiently refined for reliable measurement of efficiency that the greatest actual retardation in the public schools is to be found not, as previously supposed, in the case of the dull child but in the case of the bright child. In view of his possibilities of achievement, the bright child is a conspicuous victim of retardation.

This fact has been repeatedly brought out by retardation studies in all sections of the country. The study made in the Salt Lake City schools in January, 1924, revealed no exception to the rule. Progressive retardation was shown as the intelligence level increased from the lowest to the highest.

Following the 1924 study, the question of retardation was given careful attention, and various changes were made with a view to reducing the amount of retardation. The most important of these changes may be described as the homogeneous classification of pupils in the larger schools and the improvement of methods of teaching and curriculum content in all the schools. The improved methods were based largely on recent developments in educational psychology, with special reference to the recognition of the individual differences and needs of pupils.

The term "homogeneous class" as here used refers to a group of pupils the individual members of which have been selected because, in the judgment of the teacher, based on intelligence tests, standardized educational tests, and experience, they have similar educational needs and abilities. The degree of homogeneity of classes varies with the size of the school and with the efficiency of the technique used in classifying the pupils. A heterogeneous class, on the other hand, is made up of pupils of all degrees of ability and needs.

The question involved in the study here reported[1] concerns the methods used in Salt Lake City to decrease the retardation of pupils of better than normal ability and to compare the retardation of bright pupils most of whom were taught in homogeneous classes for three years with that of pupils of the same ability taught in heterogeneous classes. The problem may be specifically stated as follows: How do the accomplishment differences of pupils of various intelligence levels above normal compare with those of pupils of corresponding intelligence levels as found in the Salt Lake City schools in January, 1924? What is the relation of these differences to the type of classification used?

Data for this study were obtained from tests given in January, 1924, and in part repeated during the spring months of the school year 1926–27. The following educational tests were used in both cases: Thorndike-McCall Reading Scale for the Understanding of Sentences, Morrison-McCall Spelling Scale, and Salt Lake City Mixed Fundamentals. The Haggerty Intelligence Examination, Delta 2, was used as a general basis for classification in the fourth, fifth, and sixth grades in 1924; the Terman Group Test of Mental Ability was used in the seventh grade. The Multi-Mental Scale for Elementary School was used in all grades for the same purpose in 1927.

The 1924 study included 1,114 pupils, taught in thirty-four classes, all of which were heterogeneous groups. These classes represented all intelligence levels found in the public schools and all sections and social groups of the city. Most of the pupils were in Grades V B, VI B, and VII B, although the IV B class was also represented.

In the 1927 study, involving 1,466 pupils taught in fifty classes, only pupils scoring 90 or above on the intelligence test were included, as the problem involved concerned principally pupils of better than normal ability. These fifty classes represented three groupings of pupils for the purposes of the study. Twenty-one classes, involving 714 pupils, were homogeneous groups, each of which averaged 109

[1] The writer acknowledges his indebtedness to the principals and the teachers of the Salt Lake City schools, who responded whole-heartedly to the many exacting requests made in connection with this study. Appreciation is particularly due Mrs. Louise Tripp for statistical assistance.

or above on the intelligence test. Fifteen classes, involving 426 pupils, were typical heterogeneous classes, located generally in the smaller schools, where homogeneous classification was impracticable; the average intelligence scores for these classes ranged from 90 to 105, inclusive. Fourteen classes, made up of 326 pupils, represented all the pupils in Grades IV B–VII B, inclusive, in one large school, herein referred to as School X. This school had continued its heterogeneous classification in practically the same form as that used in 1924 and therefore served as a valuable control for comparative purposes.

The classes were selected for this study without regard to the efficiency of the respective teachers. The principal criteria used were the type of classification employed and the average multi-mental score for the group. It was assumed that, with the large number of teachers involved, the average teaching efficiency of the different groups of teachers would be the same. This assumption was supported by the efficiency ratings given the teachers involved by principals and supervisors.

Any differences in age norms for the tests or any differences caused by the lapse of time between the dates on which the tests were given were made negligible by the conversion of crude scores into sigma scores based on chronological ages.

The sigma score is derived from the crude, or point, score in any test and shows the pupil's standing in comparison with that of other pupils of his own chronological age. Such scores are standardized in terms of the normal frequency curve of scores of pupils of the same age from all the schools of the city. The mean score of these pupils is called 100; the point one sigma below the mean is called 80; the distance between these two points is divided into twenty equal units. Likewise, the point one sigma above the mean is called 120, and so on, the scale ranging in equal parts from five sigmas below the mean, or zero, to five sigmas above the mean, or 200.

The pupil's sigma score in any test is read from a table which shows in terms of a sigma index unit the position of the pupil on the base line of the normal frequency distribution.

The use of the sigma score for a series of intelligence and achievement tests automatically reduces these tests to a common standard

since each takes as its point of reference 100, the actual mean established for all the scores made by pupils of the particular age level in all the schools of the city. The average sigma score of a pupil in reading, arithmetic, and spelling indicates, therefore, the standing of the pupil in comparison with the standings of pupils of the same chronological age in all the schools.

By subtracting the intelligence sigma score from the achievement sigma score, the accomplishment difference is obtained. The accomplishment difference is comparable to the accomplishment quotient and is probably the most valuable single index available at the present time to show the scholastic efficiency of the individual, the class, or the school. An accomplishment difference of zero shows normal achievement; a minus score shows less than normal achievement; a plus score, more than normal achievement.

It will be observed that the use of the sigma score in this study reduces both intelligence and educational tests to a common standard even though more than three years elapsed between the first battery of tests and the second.

Table I shows the distribution of the achievement scores of pupils who scored from 120 to 129, inclusive, on the Multi-Mental Scale for Elementary School. A similar table was constructed for each interval of ten points on the intelligence scale above 90. The characteristic groupings of scores for pupils taught in homogeneous classes and in heterogeneous classes respectively are apparent. The distribution of scores made by Salt Lake City pupils in January, 1924, is not available; however, the mean and the number of pupils for each intelligence level are indicated in Table II.

It will be observed from Table I that pupils representing the intelligence level 120–129 and taught in homogeneous classes made an average achievement score of 122.51 while pupils of the same intelligence level and taught in heterogeneous classes made an average score of 118.66. The average score made by pupils of the same intelligence level in School X was 117.53. These results suggest a significant superiority in achievement on the part of the pupils taught in homogeneous classes. This is particularly emphasized by the fact that the scholarship scores represent an average of the scores in three subjects—thought interpretation in reading, fundamentals of arith-

metic, and spelling. The statistical technique employed in connection with the use of sigma scores in all the test results likewise tends

TABLE I

ACHIEVEMENT SCORES OF PUPILS WHO SCORED FROM 120 TO 129, INCLUSIVE, ON THE MULTI-MENTAL SCALE FOR ELEMENTARY SCHOOL

Score	Homogeneous Classes	Heterogeneous Classes	School X
147–148	2	1	.....
145–146	.....	1	.....
143–144	.....	.....	.....
141–142	2	2	.....
139–140	2	.....	.....
137–138	2	1	.....
135–136	2	.....	.....
133–134	2	3	.....
131–132	5	1	3
129–130	5	3	.....
127–128	13	1	3
125–126	6	4	.....
123–124	3	2	3
121–122	15	3	.....
119–120	12	7	5
117–118	6	1	4
115–116	10	4	4
113–114	5	3	3
111–112	7	2	1
109–110	1	3	2
107–108	2	3	.....
105–106	1	2	1
103–104	.....	4	.....
101–102	.....	2	1
99–100	1	.....	2
97– 98	2	.....	.....
95– 96	1	1	1
93– 94	.....	2	.....
91– 92	.....	.....	.....
89– 90	.....	.....	.....
87– 88	.....	.....	.....
85– 86	.....	.....	.....
Number of pupils	107	56	33
Mean	122.51	118.66	117.53
Standard deviation	9.55	12.75	9.27

to stabilize the measures obtained and to make them less susceptible to misleading variations.

The distribution of scores around a measure of central tendency is quite as illuminating as is the central tendency itself. It is now a well-recognized principle in education that an adequate measure of

TABLE II

NUMBER OF PUPILS, MEAN ACHIEVEMENT SCORES, AND STANDARD DEVIATIONS FOR PUPILS OF VARIOUS INTELLIGENCE LEVELS TAUGHT IN HOMOGENEOUS CLASSES, IN HETEROGENEOUS CLASSES, AND IN SCHOOL X AND COMPARABLE SALT LAKE CITY SCORES FOR JANUARY, 1924

INTELLIGENCE GROUP	HOMOGENEOUS CLASSES			HETEROGENEOUS CLASSES			SCHOOL X			SALT LAKE CITY, JANUARY, 1924	
	Number of Pupils	Mean	Standard Deviation	Number of Pupils	Mean	Standard Deviation	Number of Pupils	Mean	Standard Deviation	Number of Pupils	Mean
90– 99	94	111.97	10.05	78	108.84	10.36	57	106.15	8.93	200	97.4
100–109	151	114.59	10.42	124	113.72	11.14	103	109.32	9.75	250	103.7
110–119	191	118.14	9.80	101	116.69	11.96	71	114.12	10.40	176	111.0
120–129	107	122.51	9.55	56	118.66	12.75	33	117.53	9.27	82	116.0
130–139	103	121.79	8.34	41	121.62	10.84	36	121.94	8.51	34	119.4
140 and above	68	126.97	9.40	26	124.46	9.23	26	122.88	10.25	24	114.4
Total	714	.....	.....	426	.....	.....	326	.....	.....	766	.....
Composite	.....	118.53	9.68	.....	115.40	11.26	.....	113.12	9.60	.....	105.61

efficiency in teaching or learning must take into account the native capacity of the class or the child in question. In fact, the intelligence of the child is probably the most significant single factor in determining his relative progress in the work of the school. It would seem evident from the foregoing that, if the pupils of a limited intelligence range—for example, from 120 to 129, inclusive—are living approximately up to their possibilities, the distribution of their educational scores will be confined to a relatively small part of the achievement scale; a wide distribution of achievement scores would be expected if an appreciable number of pupils were failing to accomplish results commensurate with their abilities.

The standard deviation is a convenient and reliable measure of the degree of variation of the scores from the average of the group. It will be noted that the standard deviation of 12.75 for pupils taught in heterogeneous classes is slightly more than 33 per cent larger than the standard deviation of 9.55 for pupils taught in homogeneous classes. This undoubtedly indicates that the school failed in stimulating a relatively large number of pupils in heterogeneous classes and in guiding their efforts to the best educational results. Indeed, it is probable that many of these bright pupils who made consistent educational achievements did so because of the influence of factors outside the school. The standard deviation of the scores of the pupils in School X is practically the same as that of the scores of the pupils in homogeneous classes. The small number of pupils involved, however, makes this measure somewhat less reliable.

The space available will not permit the presentation of other tables corresponding to Table I. The number of pupils at each of six intelligence levels, the mean achievement scores, and the standard deviation are, however, indicated in Table II.

It will be noted from Table II that superior achievement on the part of pupils taught in homogeneous classes is typical for all the intelligence levels. With but one slight exception, these pupils at all the intelligence levels recorded show superior achievement over the pupils taught in heterogeneous classes, over the pupils taught in School X, and over the pupils in corresponding grades in the Salt Lake City schools as tested in January, 1924. The one exception is at the intelligence level 130–139. The pupils in School X at this

intelligence level made an average score of 121.94, while the corresponding pupils in the homogeneous classes scored 121.79, a difference of .15 in favor of School X. The superior achievement of pupils taught in homogeneous classes would seem to present substantial evidence in favor of this type of classification although, as noted, the differences are not large.

The improved scholastic achievement of the normal and bright pupils in the Salt Lake City schools since January, 1924, as indicated in Table II, is an important phase of this report. The improvement is brought out more clearly in Figure 1, which presents the significant features of Table II in graphic form. It will be noted that the scores for both the heterogeneous classes and School X as well as for the homogeneous classes are superior to the Salt Lake City scores for 1924.

Figure 1 shows the achievement of each ability level for each group studied in comparison with the intelligence score. The ability level is assumed for graphic purposes to be the middle point of the intelligence-score interval. For example, the group scoring from 90 to 99, inclusive, is assumed to have a mean intelligence level of 95. If the achievement score is greater than the intelligence score, a positive difference in favor of scholarship is noted; if the achievement score is less than the intelligence score, a negative difference is recorded. For example, the pupils taught in homogeneous classes and scoring an average of 95 on the intelligence test made an average achievement score of 111.97, as indicated in Table II. By subtracting 95 from 111.97, the accomplishment difference of 16.97 is obtained. Since this number is positive, it is shown in Figure 1 at a point 16.97 units above zero accomplishment difference. When the difference obtained by subtracting the intelligence score from the achievement score is a minus number, it is represented in Figure 1 by a point below the position of zero accomplishment difference. It will be observed that the accomplishment of bright pupils has been much improved since January, 1924, although these pupils are still below their possibilities.

It must not be assumed that the very high achievement of pupils at the 90–99 and the 100–109 intelligence levels is typical of all pupils of these levels in the Salt Lake City schools. The average schol-

arship for the two intelligence levels, 90–99 and 100–109, is 100. This is, of necessity, a result of the statistical technique used. The superior scholarship of the particular pupils in question is an indication of the possibilities awaiting better classification and better teaching methods. It shows what is actually being accomplished by a relatively small number of pupils who are offered superior advan-

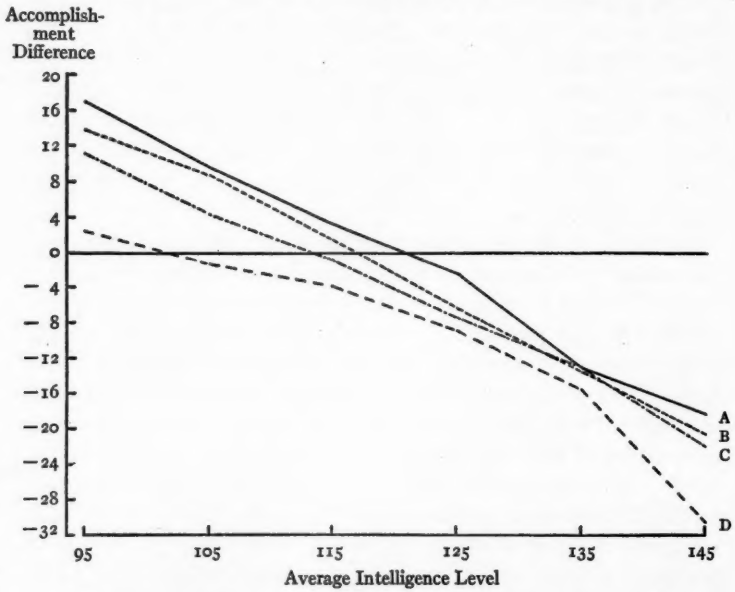

FIG. 1.—Accomplishment differences for various intelligence groups. A, homogeneous classes; B, heterogeneous classes; C, School X; D, Salt Lake City, 1924.

tages by the school. These results show the achievement of these pupils in comparison with that of other pupils of the same ability who have received less stimulation and poorer guidance from the school. The scores reported in this study represent the achievement of pupils of these levels taught respectively in homogeneous classes averaging above 109 in native ability and in typical heterogeneous classes averaging near normal and representing a cross section of all intelligence levels from the lowest to the highest. Both of these class

organizations offer superior advantages to pupils of normal ability—those scoring from 90 to 110, inclusive—and hence their superior scores.

It will be observed from Table II that the wide distribution of scores around the mean in the case of the pupils at the 120–129 intelligence level in heterogeneous classes is typical of scores made by pupils of other intelligence levels taught in these classes. The standard deviation of 11.26 for all heterogeneous classes is 16 per cent greater than the standard deviation of 9.68 for all homogeneous classes. Failure of a relatively large percentage of these pupils to live up to their possibilities is suggested by these results.

CONCLUSIONS

A careful study of the experimental results here reported appears to justify the following conclusions.

1. The great majority of pupils in the grammar grades—those scoring 90 and above in native ability—are achieving significantly better scholastic results in the subjects tested than were corresponding pupils in January, 1924. This improvement is probably a result of the improved classification of pupils and the more effective methods of teaching accompanying the better classification. These methods and the supporting psychology of individual differences have spread with beneficial results to all the schools in the city.

2. Homogeneous classification of pupils offers superior advantages over heterogeneous classification for the scholastic achievement of pupils of normal ability and of more than normal ability.

3. The improvement made since January, 1924, in the scholarship of pupils of high native ability indicates that, with proper classification and instruction, these pupils may be expected to achieve scholastic results commensurate with their abilities.

4. Measures of the distribution of scores around the means show that the percentage of pupils achieving scholastic results commensurate with their abilities is larger when the pupils are taught in homogeneous classes than when they are taught in heterogeneous classes.

AN ANALYSIS OF THE ACTIVITIES OF RURAL-SCHOOL SUPERVISORS

DELIA KIBBE
State Supervisor of Elementary Schools, Madison, Wisconsin

During the past decade the task of training rural teachers in service has been undertaken in many states through the appointment of rural-school supervisors working under the direction of the county superintendent of schools. The situation faced by these supervisors has been a difficult one. The average county is more than fifteen hundred square miles in area. It contains on the average eighty-four school buildings, of which sixty-five house one-teacher schools. The average number of teachers per county is 132. Because of their short period of training in rural teacher-training institutions and their meager experience in teaching positions, rural teachers are less capable of self-direction than are teachers in urban schools. In addition to the supervisory duties confronting the rural supervisor, administrative tasks demand much time and attention.

With such a situation facing her, what activities shall the rural supervisor undertake? Which are the most important? How shall she apportion her time? In order to answer these questions and wisely to direct the activities of rural supervisors, a study of the variety and types of professional activities of rural supervising teachers in Wisconsin was undertaken during the school year 1926–27. The co-operation of the supervising teachers of the state was invited in August, 1926, when they met with members of the State Department of Public Instruction for the purpose of discussing and formulating a supervisory program for the year.

The possible results of a study of this type were presented to the supervising teachers. The benefits of an improved time budget based on the relative importance of various supervisory activities and the general improvement which might result from an improved program of supervisory activities were discussed.

The co-operating supervisors were asked to keep an accurate record for twelve days of the time spent in district professional ac-

tivities. The following program for a single day is typical of the records furnished.

7:40– 8:00 Did professional reading.
8:00– 8:15 Waited for a taxicab.
8:15– 9:00 Drove to ——— School.
9:00– 9:10 Listened to opening exercises. Complimented pupils on singing.
9:10– 9:15 Attended to furnace.
9:15– 9:35 Observed Arithmetic 8.
9:35– 9:45 Discussed Arithmetic 8 with teacher. Gave suggestions for pretest and review work.
9:45– 9:55 Observed Reading 3 and 4.
9:55–10:10 Taught Reading 3 and 4.
10:10–10:20 Observed History 5 and 6.
10:20–10:35 Observed Physiology 8.
10:35–10:45 Found books in library for extra history reading in Grades V and VI.
10:45–10:55 Filled out report blank on physical conditions and equipment.
10:55–11:00 Inspected toilets.
11:00–11:10 Observed Language 8. Asked class a few questions to clear up difficulties.
11:10–11:20 Observed Arithmetic 3 and 4.
11:20–11:25 Showed teacher a new device for drill.
11:25–11:40 Observed Arithmetic 5 and 6.
11:40–12:00 Observed History 8. Wrote suggestions for teacher.
12:00–12:30 Ate lunch.
12:30– 1:00 Had conference with teacher.
1:00– 1:40 Walked to ——— School.
1:40– 1:50 Observed Language 3 and 4.
1:50– 2:00 Observed penmanship lesson.
2:00– 2:30 Observed geography classes.
2:30– 3:00 Gave teacher suggestions for review work in geography. Discussed first-grade reading. Gave suggestions for silent reading. Answered teacher's questions about diploma examinations.
3:00– 3:20 Observed Reading 1 and Reading 2.
3:20– 3:30 Wrote suggestions for teacher. Inspected toilets.
3:30– 4:00 Waited for stage.
4:00– 4:25 Rode in stage.
4:25– 5:35 Waited for train. Did professional reading.
5:35– 6:40 Traveled. Arrived home.
9:10–10:20 Typewrote material for bulletin.

For the purpose of securing a wide range of activities rather than a seasonal list, the twelve days on which the records were made were

distributed as follows: September 13, 21, and 29; October 7, 15, 23, and 25; November 2, 10, and 18; December 3 and 11. It will be seen that these selected days called for records on Monday of the first week, Tuesday of the second week, Wednesday of the third week, and so on. This plan secured a wide distribution of records. At the end of the third week the records were sent to the office of the state superintendent. After the records were examined, letters were sent to the supervising teachers, pointing out instances of detail insufficiently clear for definite analysis of the activities involved. An opportunity was thus provided for early correction of any misunderstanding of directions.

In December the final records were forwarded. They furnished a list of sixty-five distinct types of professional activities performed by the supervisors during the twelve days covered by the records. After the total range of activities was tabulated, copies of the list were sent to the supervising teachers and county superintendents of Wisconsin and to state supervisors in several other states with the request that they rank in the order of relative importance the various activities listed. About 150 rankings were returned.

Table I shows the various activities listed by the supervisors participating in the investigation, the total number of hours devoted to each activity during the twelve days, the rank of each activity on the basis of the time devoted to it, and the relative value of each activity as determined by the data secured in the second part of the investigation.

Table II shows the correlation between the time devoted to the various activities and the relative value of these activities. It will be seen from this table that the time devoted to the different activities by the Wisconsin supervisors is not highly correlated with the relative value of these activities as determined by the combined judgments of the supervisors ranking the activities. In the first correlation between time and value all the activities were combined into one list irrespective of the classifications under the main headings. It was in this form that the supervisors were asked to rank the activities. For the analysis of the data the items were later grouped under the main headings given.

TABLE I

ACTIVITIES OF RURAL SUPERVISORS AND THE NUMBER OF HOURS DEVOTED TO EACH

Activity	Number of Hours	Rank	Rank Value
1. Activities involved in field visitation:			
Class observation	1,293.0	1	2
Conference with teachers	771.1	2	1
Preparing for conference, writing suggestions to teachers, etc.	261.1	3	3
Checking building and equipment, etc.	258.2	4	8
Demonstration teaching	214.2	5	4
Inspecting plans, register, reports, classification of children, etc.	176.9	6	6
Working with children at seats or on playground	93.7	7	14
Preparing for demonstration teaching	91.7	8	5
Administering or diagnosing tests	74.8	9	11
Participation in class work (offering suggestions or inserting questions)	57.2	10	10
Conferring with school officer or writing suggestions to him	51.6	11	7
House-cleaning and repairs	24.3	12	24
Preparing work for children—seat-work assignments	22.9	13	12
Visiting training school	21.3	14	20
Selecting textbooks for use by children or teachers	18.8	15	13
Observing children's notebooks and other work exhibited	18.7	16	18
Conference with patrons	17.1	17	15
Talking to school	16.4	18	19
Caring for injured children	12.5	19	25
Working with other agencies—health workers, etc.	5.3	20	22
Distributing materials—report cards, etc.	5.1	21	23
Conference with state supervisor	3.0	22	9
Rating attention of class	2.4	23	16
Rating teachers	1.9	24	17
Visiting with training-school faculty	1.5	25	21
2. Office activities:			
Preparing suggestions for teachers	253.2	1	2
Records and reports	241.3	2	15
Correspondence	164.7	3	18
Conference with teachers	130.9	4	1
Preparing for visits—collecting materials, reports, etc.	94.7	5	5
Preparing for professional meetings (arranging programs)	94.1	6	13
Professional reading	87.8	7	10
Conference with county superintendent	87.2	8	3
Miscellaneous activities	73.9	9	25
Testing activities	73.7	10	19
Organizing school exhibits	44.8	11	23
Conference with school boards	24.9	12	4
Publicity—writing news notes for school and local newspaper	20.7	13	20
Care of office	14.4	14	24
Conference with state workers	13.8	15	12
Examining school textbooks	13.7	16	16
Conference with training-school faculty	13.6	17	8
Telephone conferences	12.7	18	22
Organizing professional reading for teachers	11.2	19	14
Preparing talks for professional meetings	10.3	20	11

TABLE I—*Continued*

Activity	Number of Hours	Rank	Rank Value
Conference with book men and others	9.4	21	21
Conference with county nurse	8.7	22	17
Conference with supervising teachers	3.0	23	6
Conference with grade principals or superintendents	2.8	24	9
Conference with patrons	2.3	25	7
3. Transportation:			
Travel	1,220.0	1	1
Care of car	42.9	2	2
Waiting	10.9	3	4
Arranging for transportation	5.5	4	3
4. Miscellaneous activities:			
County meetings	355.2	1	2
Sectional meetings	247.3	2	1
Fair-exhibit work	138.5	3	8
Recreational institutes, play days, community clubs, etc.	28.3	4	10
Preparing for professional meetings	16.5	5	3
Health work	13.3	6	4
Talks at clubs	11.3	7	9
State meetings	8.6	8	5
Other professional meetings	7.6	9	7
Working for professional organizations	7.5	10	11
County examinations	2.5	11	6

It is apparent that there is greater agreement between time spent and estimated value of the activities involved in schoolroom visitation than between time spent and estimated value of office activities.

TABLE II

CORRELATION BETWEEN THE TIME DEVOTED TO THE VARIOUS ACTIVITIES AND THE RELATIVE VALUE OF THESE ACTIVITIES

	Correlation
Time and value	$.32 \pm .076$
Time and value (visitation activities)	$.77 \pm .055$
Time and value (office activities)	$.13 \pm .13$
Time and Wisconsin's value (visitation activities)	$.72 \pm .06$
Time and Wisconsin's value (office activities)	$.16 \pm .13$

The supervisors may have given more definite thought to the relative values of their schoolroom activities than to the relative values of their office duties.

For further analysis of the data, the quartile range of the activities was studied. It was found that many of the items were within the same quartile range in both sets of data. The following list shows the items so placed, the items which the supervisors think should

receive more time on the part of rural supervisors, and the items which the supervisors think should receive less time.

ACTIVITIES INVOLVED IN FIELD VISITATION

Activities remaining within quartile range:
- Class observation
- Conference with teachers
- Preparing for conference, writing suggestions to teachers, etc.
- Demonstration teaching
- Inspecting plans, register, reports, classification of children, etc.
- Administering or diagnosing tests
- Participation in class work
- Conferring with school officer or writing suggestions to him
- Preparing work for children—seat-work assignments
- Selecting textbooks for use by children or teachers
- Observing children's notebooks and other work exhibited
- Conference with patrons
- Talking to school
- Working with other agencies—health workers, etc.
- Distributing material—report cards, etc.
- Visiting with training-school faculty

Activities for which data suggest increase of time:
- Preparing for demonstration teaching
- Conference with state supervisor[1]
- Rating attention of class[1]
- Rating teachers[1]

Activities for which data suggest decrease of time:
- Checking building and equipment, etc.
- Working with children at seats or on playground
- House-cleaning and repairs[2]
- Visiting training school[2]
- Caring for injured children[2]

OFFICE ACTIVITIES

Activities remaining within quartile range:
- Preparing suggestions for teachers
- Conference with teachers
- Preparing for visits—collecting materials, reports, etc.
- Professional reading
- Conference with state workers
- Examining school textbooks
- Organizing professional reading for teachers
- Conference with book men and others

[1] Moved more than one quartile range upward.
[2] Moved more than one quartile range downward.

Activities for which data suggest increase of time:
- Conference with county superintendent
- Conference with school boards
- Conference with training-school faculty
- Preparing talks for professional meetings[1]
- Conference with county nurse
- Conference with supervising teachers[1]
- Conference with grade principals or superintendents[1]
- Conference with patrons[1]

Activities for which data suggest decrease of time:
- Records and reports[2]
- Correspondence[2]
- Preparing for professional meetings
- Miscellaneous activities[2]
- Testing activities
- Organizing school exhibits[2]
- Publicity—writing news notes for school and local newspaper
- Care of office
- Telephone conferences

A study of the data was made to determine the relation between good supervision according to the relative value of activities as listed by the participating supervisors and the educational training of the supervisors. The correlations are as follows: college graduates, $.33 \pm .075$; normal-school graduates, $.34 \pm .074$; holders of county certificates, $.33 \pm .075$. No differences in supervisory ability due to the educational training of the supervisors were disclosed. Many of the supervisors in the second and third groups have almost completed the requirements for the Bachelor's degree. Hence, the differences in educational training may be largely eliminated.

The question whether amount of experience in supervisory work is a factor in success was also studied. The correlations are as follows: two years or less, $.34 \pm .074$; three years or more, $.34 \pm .074$. These data furnish no information on the question.

Rural supervisors may find some suggestions for the organization of their professional work in this report, and better time budgets may result. The Wisconsin supervisors are working on the problem this school year. The results of their efforts will be reported later.

[1] Moved more than one quartile range upward.

[2] Moved more than one quartile range downward.

REMEDIAL INSTRUCTION IN READING

HENRY J. OTTO
Superintendent of Schools, Buffalo Lake, Minnesota

Reading ability is no longer considered as one general ability.[1] The general ability has been minutely analyzed[2] into a large number of very specific and distinct skills, each one of which may function in definite reading situations. Attempts have been made to designate the school grades in which certain of these skills should be taught.[3]

Standardized reading tests have been constructed largely on the assumption that the ability to read consists in but one general ability. If such a test is given to a group of pupils, there is no certain way of knowing which of the many specific reading skills have been tested. The resulting scores may indicate whether a pupil is above, at, or below the norm for his age and grade in the reading skills examined by that test. The scores do not indicate the pupil's relative rank in other reading skills. If a pupil scores decidedly below the norm for his age and grade on several of the available standardized reading tests, what does that mean? What can and should be done to improve that pupil's reading skills?

The following is a description of an experiment in which six over-age fourth-grade pupils of low achievement in reading were given intensive instruction in work-type reading.

Table I shows the chronological ages, mental ages, intelligence quotients, and reading scores of these six pupils. The pupils were from thirteen to twenty-seven months over-age chronologically. Three of them were also over-age mentally. According to their men-

[1] *The Report of the National Committee on Reading.* Twenty-fourth Yearbook of the National Society for the Study of Education, Part I. Bloomington, Illinois: Public School Publishing Co., 1925.

[2] L. J. Brueckner and Prudence Cutright, *The Technics and Evaluation of a Supervisory Program in Work Reading.* Educational Bulletin No. 12. Minneapolis, Minnesota: Board of Education, 1927.

[3] *Reading in the Saint Cloud Public Schools: Grades One to Six.* Prepared by Ruth Ewing Hilpert. Saint Cloud, Minnesota: Board of Education, 1925 [revised].

tal ages, three of them should have been doing fifth-grade work; yet their reading skills as measured by the teacher's judgment and by three standard reading tests were of poor fourth-grade quality.

The six pupils were sent to the remedial room forty minutes a day for forty-five consecutive school days, from January 10 to March 11, 1927. In the remedial room a special teacher devoted her efforts to

TABLE I

CHRONOLOGICAL AGES, MENTAL AGES, INTELLIGENCE QUOTIENTS, AND READING SCORES OF SIX PUPILS IN GRADE IV

PUPIL	CHRONOLOGICAL AGE	MENTAL AGE	I.Q.*	MONROE SILENT READING TEST		T-SCORE—THORNDIKE-McCALL READING SCALE	GRAY ORAL READING CHECK TESTS, SET II	
				Rate	Comprehension		Seconds	Errors
1	10–2	8– 8	85	131	7	35	60	4
2	10–1	8–10	87	106	4	35	70	1
3	11–3	10– 3	91	44	4	38	120	1
4	10–5	9– 4	89	81	7	36	72	3
5	10–4	9–11	95	72	5	45	87	3
6	10–2	10–11	107	128	8	43	65	2
September standard	.....	.....	.....	122	7.7	39.6	62	2

* Haggerty Intelligence Examination, Delta 2.

the instruction of similar special groups. The instruction was planned in such a way that all pupils were working apparently at top speed during the entire forty minutes each day.

The following is a list of the work-type reading skills selected and the kinds of reading exercises and drills given these pupils in an effort to develop these specific skills.

1. A knowledge of what makes oral reading effective.
   a) A pupil reads a selection; then the teacher reads it. The pupils note and discuss the difference in reading.
   b) The pupils pick out the characteristics of a good reader, namely, reads smoothly, reads clearly, knows the words, pauses at the right places, and reads with expression.
   c) Practice in oral reading. The teacher writes on the board two or three lines of conversation. Different pupils read the selec-

tion while the others listen to choose the best reader and to give the reasons for their choice. A short exercise like this was given each day for fifteen days. "The Ugly Duckling," "The Doctor's Mare," "The Land of Nod," and "The Traveling Musicians" were chosen from the Lewis and Rowland Third Reader. These stories contain conversation, and certain parts were read by different pupils to show the difference in expression.

2. Skimming in preparation for oral reading.
   a) The whole class reads silently and quickly a short selection to be read orally later.
   b) The pupils skim a whole story, such as "The Ugly Duckling," in preparation for oral reading.
3. Ability to pronounce and recognize all the words in a selection.
   a) Review of different sounds.
      (1) Blends, such as *thr* and *sk*.
      (2) Phonograms, such as *ate* and *ing*.
   b) Putting sounds together to make words.
   c) Finding sounds in hard words on the board.
   d) Analyzing words.
   e) Sounding words listed on the board.
   f) Word drill from flash cards.
      (1) Phrases, such as "in the house" and "by the house."
      (2) Direction exercises, such as "Close the door," "Bring me a book," "Open and close your eyes," and "Raise your right arm."
4. Ability to interpret the thought of a selection accurately. (The thought that pupils obtain from sentences is sometimes incorrect because of incorrect phrasing.)
   a) Flash-card drills, such as "by me."
   b) Sentences are written on the board for the pupils to mark off into correct phrases, such as "She went to the house," "They all went to the house," "When there was nothing else to do, they all went walking," and "There he would stay until he was so tired and sleepy that he was glad to run to bed." After a pupil has marked off a sentence, he reads it according to his marking, that is, he reads the words in groups by phrases.

c) Parts of stories are cut from old readers and given to the pupils to mark off into phrases and read.

d) Pupils try to apply in sight-reading exercises what they have learned about reading words in correct groupings.

5. Proper attitude toward an audience.

a) Each pupil is given a different book (sample copies of new readers or library books). Each pupil prepares a story to read to the class. While one pupil is reading, the rest are the audience.

b) In this audience reading each pupil tries—

(1) To read smoothly.

(2) To enunciate clearly.

(3) To read without pausing in the wrong place.

(4) To use the correct phrasing so as to give the listeners the meaning intended.

(5) To read with expression so as to hold the interest of the audience.

(6) To look up at the audience while reading.

6. Ability to comprehend quickly what is read.

a) Establishing rapid and rhythmic eye-movements.

(1) Flash cards—first, phrases; then, short sentences; then, longer sentences; finally, sentences with seven or eight phrases. The children race to see who can get the correct answer first.

(2) Rapid reading of a selection to get a certain point. "The Lad and the North Wind" and "The Owl and the Pussy-Cat" from the Lewis and Rowland Third Reader.

b) Eliminating lip reading.

(1) Pupils try reading with and without lip-movement and note the difference in speed of reading.

(2) During silent reading lip readers are reminded by a slight tap on the head.

(3) A time limit is set for the reading of a certain passage.

(4) Interest is created in material to be read.

c) Acquiring a vocabulary of accurate meanings.

(1) Answering questions to check comprehension; sometimes questions are printed at the end of the selection in the

textbook (Lewis and Rowland Third Reader, p. 62) or questions may be written on the board by the teacher.

(2) True-false tests (Lewis and Rowland Third Reader, p. 179).

(3) Quick-thinking exercise (Lewis and Rowland Third Reader, p. 27), "Opposites" (p. 188), "Longer Lists" (p. 229), "Correct Lists" (p. 238), "Comparisons" (p. 28), "Words Out of Place" (p. 43), "Arranging Words" (p. 57), "Good Sense" (p. 69), "Making Sense" (p. 128), and completion exercises on flash cards (Horn-Shields).

d) Acquiring the habit of vigorous reading.

(1) "Clear Thinking" (Lewis and Rowland Fourth Reader, p. 13).

(2) "Acting for the 'Movies'" (Lewis and Rowland Fourth Reader, p. 25).

(3) "A Riddle" (Lincoln Third Reader, p. 33).

(4) "Mixed Sentences" (Lewis and Rowland Fourth Reader, p. 240).

These exercises are given under time pressure.

7. Ability to select and evaluate material.

a) Deciding whether a certain question is answered.

(1) Lewis and Rowland Third Reader, pages 27, 245, 179, 128, and 96.

(2) Comprehension exercises—Horn-Shields flash cards.

b) Sorting out essential and nonessential statements or words.

(1) Comprehension exercises—Horn-Shields flash cards.

(2) Lewis and Rowland Third Reader, page 96.

(3) Lewis and Rowland Fourth Reader, pages 240, 99, 91, 70, and 47.

c) Reading to determine what questions are answered.

(1) Learn To Study Readers, Book Two, page 190.

8. Ability to organize what is read.

a) Picking out the central idea.

(1) Paragraphs are cut from old readers and given to the pupils to read. Each child states orally in a short sentence what each paragraph is about (Lincoln Third Reader, p. 48). After several exercises like this have been given, the

children are asked to write the main thought. The main thoughts are then written on the board, and the children choose the best one. They are also given parts of stories cut from old readers, usually containing two paragraphs. The children write the main thought of each one.

b) Selecting the main topics.

(1) A story is read, and a good name is selected for it (Lewis and Rowland Third Reader, p. 180).

(2) Several paragraphs are selected, and the children pick out the topic sentence for each paragraph.

c) Outlining.

(1) Pupils fit topics to paragraphs (Lewis and Rowland Fourth Reader, pp. 27–30).

(2) Class as a whole outlines a story. Outline is placed on the board. (Lewis and Rowland Fourth Reader, pp. 39–46)

(3) Pupils outline individually (Lewis and Rowland Fourth Reader, pp. 62–69). After each child has made his outline, he tells the story from the outline.

9. Ability to remember what is read.

a) Lewis and Rowland Fourth Reader, page 147. The selection is to be read in one minute. The pupils had to re-read it twice to get all the details.

b) Acting for the "movies."

c) The pupils read a story to tell to the class (Lincoln Fourth Reader, p. 150).

The following excerpts from the daily class procedures show the number and variety of exercises used and the kinds of reading skills which received attention and drill during any one day.

MONDAY

1. Flash-card drill on phrases.

2. Silent reading of "Old Sultan" (Lewis and Rowland Third Reader). Timed reading followed by questions to test comprehension.

3. Quick-thinking exercise for speed and comprehension.

TUESDAY

1. Silent reading of "The Doctor's Mare" (Lewis and Rowland Third Reader) in preparation for oral reading. Parts of the story discussed and read by different pupils to see who could interpret the meaning the best and get the best expression.

WEDNESDAY

1. "The Doctor's Mare" re-read for smoothness and expression.
2. "The Land of Nod" (Lewis and Rowland Third Reader) studied for oral reading. Parts read orally by different pupils.

THURSDAY

1. Silent reading followed by written answers to questions.
2. Flash-card drill.
3. Evaluation of material. Pupils read the story silently and then selected statements which were true.

FRIDAY

1. Flash-card drill.
2. Vocabulary drill—synonyms
3. Clear-thinking exercise.
4. Understanding exercise.
5. Silent reading followed by questions. Rate of reading compared with previous rate.

Before the remedial work was undertaken, only one of the six pupils came up to the fourth-grade standard in rate of reading as measured by the Gray Oral Reading Check Tests (Table II). At the

TABLE II

TIME IN SECONDS AND NUMBER OF ERRORS AT BEGINNING AND AT END OF REMEDIAL INSTRUCTION (GRAY ORAL READING CHECK TESTS)

PUPIL	TIME IN SECONDS		NUMBER OF ERRORS	
	January 7	March 10	January 7	March 10
1	60	42	4	0
2	70	46	1	0
3	120	75	1	1
4	72	59	3	1
5	87	63	3	4
6	65	58	2	2
Standard (Grade IV)	.....	62	.....	2

end of the period of remedial instruction there was only one pupil more than one second below the standard. The pupils increased their rate from 11 to 38 per cent. Only one pupil made more than two errors on the final test.

During the period of remedial instruction four of the pupils increased their rate of reading as measured by the Monroe Silent

Reading Test (Table III). Five pupils increased their rate from March 11 to May 27. According to the Gray Oral Reading Check Tests (Table II), all the pupils increased their rate of reading. Five pupils increased their comprehension during the period of remedial instruction (Table III), and three increased their comprehension

TABLE III

RATE AND COMPREHENSION IN READING BEFORE AND AFTER REMEDIAL INSTRUCTION AND ELEVEN WEEKS LATER (MONROE SILENT READING TEST)

PUPIL	RATE			COMPREHENSION		
	January 8	March 11	May 27	January 8	March 11	May 27
1	131	148	127	7	12	10
2	106	83	94	4	6	8
3	44	83	104	4	7	8
4	81	91	95	7	6	8
5	72	81	95	5	8	6
6	128	109	124	8	9	8
September standard (Grade IV)	.....	.....	122	.....	.....	7.7

TABLE IV

READING AGE IN MONTHS BEFORE AND AFTER REMEDIAL INSTRUCTION AND ELEVEN WEEKS LATER (THORNDIKE-MCCALL READING SCALE)

Pupil	January 8	March 11	May 27
1	107	141	121
2	107	130	110
3	116	135	144
4	110	158	152
5	135	158	150
6	130	152	127
January standard (Grade IV)	126	.....	.....

from March 11 to May 27. On May 27 there was only one child below the September standard of comprehension for Grade IV.

The pupils increased their reading ages from nineteen to forty-eight months during the nine weeks of remedial instruction (Table IV). Five pupils made a permanent increase of from three to forty-two months, as shown by the test results eleven weeks after the

remedial instruction was discontinued. Pupil 6 gained twenty-two months during the remedial period but fell back three months below what she was before the remedial instruction. Her scores on the other tests (Tables II and III) show similar results. The results of the three objective measures (Tables II, III, and IV) show that the other five pupils made commendable permanent gains as a result of the remedial instruction.

According to the measurements made by the three standard tests, all six pupils profited greatly by the remedial instruction. It may be that all the tests measure the same reading skill or skills. Whether this be true or not, it is certain that during the period of remedial instruction the pupils made measurable gains in whatever skills or abilities are measured by the tests. It is not certain whether the gains may be attributed to one particular kind of drill, one certain group of exercises, the attitude of the pupils, the wide variety of activities in which the pupils engaged, or other factors. One might make the obvious assertion that the gains are to be credited to those drills and exercises which tend to develop the skills measured by the tests. As reading abilities are analyzed more minutely and as reading tests are developed which will measure specific skills, it may be possible to determine more accurately which reading abilities should be stressed in any one person. It may then be possible to devise certain drills or exercises which will aid in developing deficient or needed skills in reading.

AN ANALYSIS OF THE SOURCES OF ERRORS IN 104 WORDS MISSPELLED BY PRIMARY-SCHOOL CHILDREN IN THE CITY OF BALTIMORE

DOROTHY SPEER
Junior High School No. 80, Baltimore, Maryland

An analysis of the errors in 104 words misspelled by three hundred primary-school children in the city of Baltimore was made in an effort to determine *why* misspellings occur. Research workers who have spent a great deal of time and energy on this problem have had to content themselves with learning *how* pupils come to misspell, and the writer has had to do likewise.

Leta S. Hollingworth[1] and Cook and O'Shea[2] give interesting lists of causes of misspellings. Hollingworth gives the following classification of misspellings due to lapses.

1. Errors which result from automatically copying the ending of a word that is just *above* the word being spelled, e.g., close*t*
clock*t*

2. Errors which result from automatically including a syllable of a word that is to *follow* the word being written, and which is therefore coming "to mind" as that word is being finished, e.g., "postard card." This seems to occur especially when there is marked *similarity* between the two syllables, as in the example given.

3. Errors which result from a tendency to omit, in written spelling, one of the letters which require a similar motor response for their execution, e.g., "sd" for "sad" and "gld" for "glad."

4. Errors which result from writing a letter that has common kinaesthetic elements *instead* of the correct letter, e.g., "dod" for "dog" and "forn" for "form." (In such cases the nervous system seems to satisfy itself with executing a part instead of a whole.)

5. Errors which result from substituting a letter that has common visual elements instead of the required letter, e.g., "goiny" for "going" and "storeheeper" for "storekeeper."

[1] Leta S. Hollingworth assisted by C. Amelia Winford, *The Psychology of Special Disability in Spelling*, pp. 38–39. Teachers College Contributions to Education, No. 88. New York: Teachers College, Columbia University, 1918.

[2] W. A. Cook and M. V. O'Shea, *The Child and His Spelling*, pp. 23–47. Indianapolis, Indiana: Bobbs-Merrill Co., 1914.

6. Errors (very common) which result from substituting a letter that has common phonetic elements for the required letter, e.g., "celect" for "select" and "podchees" for "potcheese."

7. Errors which result from transposing two adjacent letters, as is so often done in typewriting, e.g., "Indain" for "Indian" and "mintue" for "minute."

8. Errors which result from perseveration of an element, especially a dominant element, in a word just used, e.g., "the theeth" for "the teeth."

9. Errors which result from a tendency to omit the last letter of the word being written, when the initial letter of the next word has the same or a similar sound, e.g., "advise to" for "advised to."

10. Errors due to doubling the wrong letter in a word which contains a doubled letter, e.g., "frezze" for "freeze."[1]

To these sorts of lapses Cook and O'Shea add the following: (1) the capricious displacement of silent letters; for example, the silent *g* in "foreign," "by virtue of the very fact that it is silent, is liable to suffer all sorts of displacement"; (2) the reverse of curtailment, namely, the "repetition of a phrase, word, or portion of a word in the writing of connected discourse."[2]

All the authorities agree that the teacher must watch these lapses in the case of each individual pupil or the pupil may develop an "idiosyncrasy," that is, he may make the same type of mistake repeatedly. Cook and O'Shea emphasize the fact that "a careful record of the misspellings may enable a teacher in time to detect the characteristic lapses of certain pupils, so that the latter may be put on their guard."[3]

The writer has used these classifications of causes of misspellings in the analysis of the errors in the 104 words misspelled by the Baltimore primary-school children.

One variety of errors, namely, the very common lapse of transposing adjacent letters, is exemplified in the particular misspellings of the following words.

Right	Wrong	Right	Wrong
sits	sist	race	reac
coat	caot	grapes	greaps
class	calss	girl	gril
throw	thorw	little	littel

[1] Leta S. Hollingworth assisted by C. Amelia Winford, *op. cit.*, pp. 38–39.

[2] W. A. Cook and M. V. O'Shea, *op. cit.*, pp. 31–32.

[3] *Ibid.*, p. 33.

Right	Wrong	Right	Wrong
kite	kiet	their	thier, thire
is	si	does	dose
when	whne	dear	dare
play	paly	use	ues
true	ture	who	woh, how
are	rae		

The following group of words shows the equally common tendency to omit letters resulting from a propensity to shorten the word one is writing. It should be noted that a single reason for a given misspelling frequently fails to account adequately for the word as it is written. Furthermore, the explanation cannot always be given with absolute certainty; hence, the added comments.

Right	Wrong	Comments
safe	saf	The error may be due to the silent *e*.
eight	eigh	The error may be due to the fact that *gh* is a very common ending of words; hence, the analogy.
spoke	soke	
hope	hop	
shape	sape	
spend	spen	
shade	sade	
second	scond, secod	
tells	tlls	
stop	sp, stp, sop	
stops	stps	
cap	cp	
milk	mlk	
when	whn, whhn	The second error is due to kinaesthetic inertia; that is, when the child started to make the *h*, he seemed unable to stop.
run	ru	
come	com	The error may be due to the silent *e*.
some	som	
every	evey	The error may be due to colloquial pronunciation or to indistinct enunciation.
have	hae, haf	Besides omission, the second misspelling clearly shows foreign influence.
throw	thow, thrw, thro	The last error may be due to ignorance of the silent *w*, a crucial point in the word.
catch	cath, cach	
use	us	

The converse of omission is "redundancy." One example found in the analysis is "weene" for "when." The omission of the *h* is attributable to indistinct enunciation, but the repetition of the *e* is due to redundancy. The *e* at the end of the word is probably caused by analogy to other words ending in silent *e*. A case of a similar nature is seen in "munch" for "much," where the mistake results from a tendency to insert a letter which requires a similar motor response for its execution. "Wehen" for "when" is still another example of redundancy. There is also present the transposition of *h* and *e*, which is a common type of error. A third reason for this particular misspelling may be traced to a tendency on the part of some people to drawl and thus make a two-syllable word from a one-syllable word.

Examples of errors due to the doubling of the wrong letter in a word or the reverse, the singling of letters which ought to be doubled, are as follows:

Right	Wrong	Comments
pull	pool	
class	calls	The error is also an inversion or a confusion of words.
cool	coll	
sorry	sorey, sooray	Besides the error of no doubling or of wrong doubling, an analogy has been made between the sound of the *y* in this word and the same sound of final *ey* or *ay* in other words.

Cook and O'Shea say that the incorrect doubling of vowels is infrequent, "but most of the consonants are frequently doubled, and the result is not apparent from the pronunciation of a word. The place where doubling is likely to occur is usually in the middle of a word where a syllable stops or begins with a certain consonant. The mistake arises in assigning the consonant to each of the two adjacent syllables, as 'singging' for 'singeing,' 'millage' for 'mileage,' 'pittiable' for 'pitiable,' 'furrious' for 'furious,' and 'burried' for 'buried.' Following the same principle, one member of a double consonant may be dropped under like circumstances, as, 'derick' for 'derrick,' 'stopage' for 'stoppage,' and 'rebelion' for 'rebellion.' " Cook and O'Shea assert that these errors cannot successfully be

combated by mere application or stressing of spelling rules but that the best remedial treatment that can be advised is that of "directing the attention upon the crucial points." Laying "special stress on double combinations, by means of oral spelling without regard to syllabication, might prove very helpful as a means of fixing the doubled letter, especially for those in whom auditory imagery is strong."[1]

The children who misspelled the following words substituted letters having common visual elements or had confused visual images.

Right	Wrong	Comments
calls	casst	The error includes the transposition of the "ascending" letters *l*, which are replaced by *t*.
catch	cathe	
dog	doy, log, gog	The errors are due to confusion and substitution of letters having common visual elements.
the	tke	
doll	ball	The error may be due to a confusion of words.
bat	lat	The error may be due to poor penmanship.
box	lox	The error may be due to poor penmanship.
sight	sipest	The *p* is due to visual similarity of *g* and *p*, but the *est* is due to ignorance.
boy	loy	The error may be due to poor penmanship.
by	bp	The error is due to common visual and kinaesthetic elements.
boys	loys	The error is probably due to poor penmanship as well as to confused image.
seem	seen	The error is probably due to poor penmanship as well as to confused image.
sorry	storry	The error is due to visual similarity of the word "story."
shape	shage	
dictation	dictatiom	The error may be due to a "slip of the pen."
spending	spenting	

There is not only a general tendency to substitute a letter which contains common visual elements but also an inclination on the part of many people to substitute a letter that has common kinaesthetic elements. Further, there is such a phenomenon as "kinaesthetic

[1] *Ibid.*, pp. 42–43.

inertia," which has been referred to once or twice. By this is meant the tendency to continue the same motor response in the making of a letter which was required for the execution of the preceding letter. Examples of this type found in this investigation are as follows:

Right	Wrong	Comments
push	puss	After one *s* has been written, there is a motive kinaesthetically to continue the motion of making *s*.
run	rur	
runs	rums	The error may be due to poor penmanship.
you	yom, yon	The error may be due to poor penmanship.
ran	rain	Kinaesthetic inertia may be responsible for the error, the dotting of the *i* being purely accidental or the result of correction after cautioning by the teacher to dot the *i*'s.

As has been indicated, in this type of lapse the nervous system seems to satisfy itself with executing a part instead of a whole.

There are many causes other than lapses responsible for the errors in spelling common in the schoolroom and in the writing of meagerly educated adults. Cook and O'Shea note that many errors are due to mispronunciation and indistinct articulation. They say that errors of this type are "of much greater frequency and importance in the lower grades of the elementary school than in the high school, for many of them have been acquired by the child before school age." In the following paragraph Cook and O'Shea add, "It is peculiarly difficult to forecast what are the probable mispronunciations that will occur in the case of certain words, since two different sets of influences produce these errors. On the one hand, we have those individual associations made by each child for himself, such as caused one child to call a screen door a "scream door," because, as she afterward stated, it made such a noise when it closed. On the other hand, there are the peculiar survivals of the nature of dialect in the speech of every child, reflecting the idiosyncrasies in the spoken language of his family and friends."[1]

[1] *Ibid.*, p. 39.

A large number of the misspelled words in the present study are attributable to this source. The following are examples.

Right	Wrong	Comments
bill	bell	
red	rad	
sit	set	The error is due to poor usage.
sits	sets	The error is due to poor usage.
grapes	graepis	
loves	loaves	The error is due to a tendency to drawl, thus producing two syllables.
will	well	The error may be the result of indistinct writing.
storm	storom	
Thursday	Thuersday	The error may result from confusion with "Tuesday."
friend	frind	
second	sacond	
room	roam	The error may be due to indistinct writing or drawly pronunciation.
tell	toll, tall	The error may be due to a confusion of vowels.
far	for	The error is due to colloquial pronunciation.
when	ween, whin, wen, win, uen	The last error is also the result of poor penmanship.
to	ta	The error may be due to poor penmanship.
what	wate	The *e* has been erroneously added on account of analogy to other silent final *e*'s.
mother	morther	
have	haf	The error is due to foreign pronunciation.
pull	pual	The error is probably due to childish drawl.
father	farther, farder	Mispronunciation and analogy to the very common "morder" for "mother" are the cause of these misspellings.
catch	cecth	The error is due to mispronunciation and transposition of adjacent letters.
door	duor	The error is due to colloquial pronunciation.
ask	acs	
fun	frun	The error may be a survival from baby talk.
fast	fist	
kite	kicte	

The best remedy for misspellings of this type is to have the teacher make certain that the child knows the correct pronunciation.

According to Cook and O'Shea,[1] one of the most frequent causes

[1] *Ibid.*, p. 39.

of error is "analogy." There are several varieties of this, such as visual analogy and phonetic analogy of words, syllables, or individual letters. If one is not thoroughly familiar with the words, one is very likely to make the same type of mistake that is made when one is introduced to a person with an unfamiliar name or when one is trying to reproduce a foreign word. This is sometimes labeled the "apperceptive difficulty."

This type of misspelling is represented by the following words spelled incorrectly by the Baltimore children whose errors are analyzed.

Right	Wrong	Comments
know	no	
catch	kach	The error is due to analogy between two single letters, *c* and *k*.
cent	sent	
asks	askes	The error is due to analogy between two syllables, that is, characteristic endings.
kite	caiet	
many	manye, menaye	The first error is probably due to an inversion for "maney," in which word one can see the analogy to the *ey* ending in such words as "money." The second error includes an obscure vowel also.
use	yous, youse	The error is due to analogy between words.
some	sum	The error is due to analogy between words.
run	win, ru, rhu	The errors are probably due to ignorance.
cap	cape, sap	The first error is due to apperceptive difficulty. The second error is due to the phonetic similarity of similar sounds of *s* and *c* although the particular likeness is inappropriate here unless it is considered on the visual basis.
you	yow	The error is probably due to poor penmanship.
sure	shore	The error may be due to mispronunciation.
room	roome	The error in this case of familiar and characteristic ending is due to "visual analogy."
skin	ckin	
greedy	greeti	The error is due to phonetic similarity of both *t* and *d* and *i* and *y*.
safe	save, salf	The second error is due to visual analogy to words containing silent *l*.
seats	seads	The error is due to both visual and auditory analogy.

Right	Wrong	Comments
seem	seam	
cool	coal	The error is due to misunderstanding.
for	four	The error is due to auditory analogy and confusion of words.
sunshine	sonshine	The error is due to auditory analogy.
row	ro	
down	doun	The error is probably due to poor penmanship.
town	toun	The error is probably due to poor penmanship.

The remedy which Cook and O'Shea advocate for this type of mistake is the development of a critical attitude toward one's language. This may be gained by systematic study of words. "Younger students cannot be placed on their guard too fully against thinking they may cite this or that word as a justification for the spelling of another word in a particular manner. There is only one real authority, and that is the way the word *is* spelled."[1]

Many words misspelled not only by children but by adults who are educated are misspelled, according to Cook and O'Shea,[2] because of an intrinsic difficulty in the English language in the form of obscure vowels. A single vowel can have a variety of sounds in different words for no apparent reason. Sometimes the vowel is elided.

The following of the 104 misspellings are due to this cause.

Right	Wrong	Comments
father	fother	
warm	worm	
their	thir	
sir	ser	
feathers	fethers	
teach	teech	
club	clob	
delay	dalay	The error is probably also due to mispronunciation.
car	cor	
they	thay	

In order to prevent such misspellings, Cook and O'Shea recommend that "every obscure vowel ought to be presented with stress

[1] *Ibid.*, p. 41.

[2] *Ibid.*, pp. 41–42.

from the start; either by positive means, such as fixing the impression by auditory and visual stimuli, intense and repeated, or by the negative method of warning against the use of other letters which the pupil might be inclined to employ in its place. The latter method . . . . if it be employed at all, must be closely watched for its effects."[1]

Wrong vowels are often substituted not because the proper vowels are obscure but merely because the children confuse them. Sometimes words are also confused. Several instances of this type of error were found in the words analyzed.

Right	Wrong	Comments
bag	big	
fast	fist	
man	men, min	The second error may be due to the mispronunciation of "men."
fill	fell, full	
tall	tell	
hill	hall	
hall	holl	The error is probably due to poor penmanship rather than to confusion of vowels.

In addition to the causes of misspelling discovered by the investigators quoted, the analysis revealed the following facts. Poor penmanship is responsible for a great many misspelled words; further examples from the 104 words need not be cited. The formation of the third person singular sometimes gives trouble, as is evident from "runes" for "runs" and "sites" for "sits." Occasionally, also, a child is inattentive to the first or the last part of a word. Inattention to the first part of a word was found in a few instances—for example, "top" for "stop" and "very" for "every." However, after all the possible sources of error have been exploited, certain misspellings remain which can be explained on no basis other than sheer ignorance—for example, "ble" for "by" and "chise" for "catch."

The foregoing discussion suffices to show that errors in spelling are by no means the "wild," unaccountable, irrational things they are often considered to be by teachers. The writer has never known a child to spell the word "when" "qfmtr," for example. Leta S.

[1] *Ibid.*, p. 42.

Hollingworth says, "There was decidedly *a limit to error*. . . . . From . . . . cursory inspections of the data we were led to believe that the length of words and the prescribed letters composing the correct spelling of words are among the chief influences limiting error; and it appeared also that the influence of any letter varies greatly with its position in the word."[1]

Another very potent factor limiting error, as former studies reveal, is the knowledge of the meaning of the word on the part of the child spelling the word. "Knowledge of meaning is probably in and of itself an important determinant of error in spelling; . . . . children will produce about 66⅔ per cent more of misspellings in writing words of the meaning of which they are ignorant or uncertain than they will produce in writing words the meaning of which they know."[2]

In conclusion, it may be said that the most prolific causes of error in spelling in these words are "lapses," analogies of various sorts, mispronunciations, and obscure vowels. Little help can be given to the teacher in the way of a general method of avoiding mistakes. In view of the fact that most misspellings seem to group themselves around certain crucial points and that these crucial points are *not* identical with spelling rules in more than 50 per cent of the cases, the best advice that can be given is to direct attention to the crucial points in specific words. These must be ascertained by experiment and dealt with individually according to the best methods, some of which have been suggested in connection with specific crucial points. Resourcefulness, ingenuity, and conscientious vigilance on the part of a skilful teacher will prove the most valuable assets in an attempt to avoid these pitfalls.

[1] Leta S. Hollingworth assisted by C. Amelia Winford, *op. cit.*, pp. 44–45.

[2] *Ibid.*, p. 57.

AN OBJECTIVE METHOD OF DETERMINING GRADE PLACEMENT OF CHILDREN'S READING MATERIAL

MABEL VOGEL
Director of Research Office, Public Schools, Winnetka, Illinois
CARLETON WASHBURNE
Superintendent of Schools, Winnetka, Illinois

Every teacher has to face the problem of fitting reading material to children's reading ability. Any attempt in the past to give children suitable material has been largely a matter of guesswork. An objective method of determining what material is appropriate for children of given reading ability is needed by classroom teachers. Similarly, in selecting textbooks and supplementary-reading material, the superintendent or supervisor should have a means of knowing whether the books are within the reading grasp of the children for whom they are intended. The writers of textbooks and other books for children need to have an objective method of determining whether their vocabulary and sentence structure are such as will offer no serious obstacles to the children who are to read what they write.

Two years ago the foundation was laid for a study of the objectively measurable differences that exist among books read and enjoyed by children of various levels of reading ability. Thirty-six thousand seven hundred and fifty widely scattered children reported on all the books which they had read during the preceding year. The ballots which they filled out were brought together, and the results of their judgments make up the *Winnetka Graded Book List*.[1]

The *Winnetka Graded Book List* is a list of seven hundred books on each of which twenty-five or more children's judgments were received. This list is graded not according to the actual school grade

[1] Carleton Washburne and Mabel Vogel, *Winnetka Graded Book List*. Chicago: American Library Association, 1926.

of the children but according to the grade to which their reading ability corresponds. The paragraph-meaning section of the Stanford Achievement Test was used as a measure of silent-reading ability. The reliability and the validity of the grading of the books in the *Winnetka Graded Book List* have been amply checked. Since the grade placement of these seven hundred books is known, it is possible to use this information in determining the grade placement of other books.

One hundred and fifty-two books were chosen from the *Winnetka Graded Book List* as a basis for the present study. About half of them are the most popular books in the various grades. The other half are books well liked by both sexes and read by an equal number of boys and girls closely concentrated around the median in reading ability. This number of books was chosen arbitrarily as a fairly good representation of the books in the list.

The Winnetka teachers' seminar, composed of twenty volunteer teachers, examined these books for every conceivable element of difficulty which might influence the grade placement. Examination was made of the following elements:

1. Vocabulary difficulty (according to Pressey's technique[1])
   - *a*) Number of different words occurring in a sampling of 1,000 words
   - *b*) Median index number (based on Thorndike's indexed word list[2]) of 1,000-word sampling
   - *c*) Number of words in 1,000-word sampling not occurring in Thorndike's list
2. Sentence structure of seventy-five sample sentences
   - *a*) Sentence use—declarative, exclamatory, imperative, and interrogative
   - *b*) Sentence form—simple, complex, compound, and complex-compound
   - *c*) Dependent clauses—noun, adjective, and adverbial
   - *d*) Phrases—adjective, adverbial, infinitive, and participial

[1] Bertha A. Lively and S. L. Pressey, "A Method for Measuring the 'Vocabulary Burden' of Textbooks," *Educational Administration and Supervision*, IX (October, 1923), 389–98.

[2] Edward L. Thorndike, *The Teacher's Word Book*. New York: Teachers College, Columbia University, 1921.

3. Parts of speech occurring in 1,000-word sampling—nouns (common and proper, abstract and concrete), pronouns, verbs (action and non-action, transitive and intransitive), infinitives, participles, gerunds, adjectives (sensory and non-sensory), articles, adverbs, prepositions, conjunctions, interjections, and expletives
4. Paragraph construction
   a) Number of sentences and words per paragraph of conversation and non-conversation
   b) Percentage of seventy-five sentences containing conversation
5. General structure
   a) Number of words to a line, number of lines to a book, and number of words to a book
   b) Length of chapters
6. Physical makeup[1]
   a) Weight
   b) Size of type
   c) Length of line
   d) Distance between lines

After all the elements were tabulated and counted for each book, each element was graphed to determine whether there was a definite rise or fall from grade to grade. Those elements showing the most definite rise or fall from grade to grade were chosen for further study, and the others were cast aside.

Table I[2] shows the correlation between each of the elements selected for further study and the median reading score of the children who read the 152 books. Table II shows the intercorrelations of the ten most promising elements in Table I. The aim in choosing these ten elements was to find elements which would correlate as little as possible with one another and as highly as possible with the

[1] The items under this heading were not fully explored as it was felt that a different technique of study was needed to determine optimum size of type, length of line, and leading appropriate to each grade. A separate study of these elements is being made.

[2] This is one of a number of similar tables constructed during the study. One table showed correlations with the reading grade instead of the reading score; another showed correlations with chronological age; etc. More than one hundred coefficients of correlation were found. The most satisfactory correlations were with the reading score, as shown in Table I.

median reading score of the children who read and enjoyed the books measured.

TABLE I

CORRELATION OF VARIOUS ELEMENTS WITH MEDIAN READING SCORE*

Element	Correlation
Number of different words occurring in a sampling of 1,000 words	.770
Median index number (based on Thorndike's list) of 1,000-word sampling	−.704
Number of words in 1,000-word sampling not occurring in Thorndike's list	.674
Number of words in book	.592
Number of phrases in 1,000-word sampling	.576
Number of verbs in 1,000-word sampling	−.527
Number of words per paragraph	.518
Number of prepositions in 1,000-word sampling	.518
Number of phrases of all kinds in 75 sample sentences	.518
Number of phrases and clauses of all kinds in 75 sample sentences	.474
Number of adverbial phrases and clauses in 75 sample sentences	.467
Number of adverbial phrases and clauses in 1,000-word sampling	.463
Number of adjective phrases and clauses in 75 sample sentences	.461
Number of adverbial phrases in 75 sample sentences	.458
Number of words in 75 sample sentences	.453
Number of simple sentences in 75 sample sentences	−.371
Number of conjunctions in 1,000-word sampling	.296
Number of adverbial clauses in 75 sample sentences	.291
Number of nouns in 1,000-word sampling	−.262

* Because of the difference in sentence length, the number of words in seventy-five sample sentences varied greatly. To reduce phrase and clause counts to a common basis in certain cases, the number of phrases or clauses was divided by the number of words in seventy-five sentences and the quotient multiplied by 1,000. The result showed the number of phrases or clauses there would be in seventy-five sentences if these sentences contained exactly 1,000 words. This procedure was used only when it yielded a better correlation than did a simple phrase or clause count of seventy-five sentences. It was not used in the case of any of the four elements that make up the final regression equation.

Various combinations of the ten elements shown in Table II were tried and a series of multiple correlations found. The best multiple correlation (.845), combining four elements, was made the basis of a regression equation which predicts with a high degree of reliability

the reading score necessary for the reading and understanding of any given book. The standard error of estimate in using this equation is 8 points in the score on the paragraph-meaning section of the Stanford Achievement Test. This means a difference of less than a grade in the lower grades and a difference of slightly more than a grade in the upper grades. This is a very reasonable standard error since it was found that any book that was read and enjoyed by chil-

TABLE II

INTERCORRELATION OF VARIOUS ELEMENTS

	Different Words in 1,000	Prepositions in 1,000 Words	Verbs in 1,000 Words	Words per Paragraph	Words in 75 Sentences	Simple Sentences in 75	Uncommon Words in 1,000	Adverbial Clauses in 75 Sentences	Nouns in 1,000 Words
Median reading score	.770	.518	−.527	.518	.453	−.371	.674	.291	−.262
Different words in 1,000	.....	.546	−.572	.516	.442	−.306	.692	.308	−.177
Prepositions in 1,000 words	.....	.....	−.777	.462	.398	−.134	.412	.131	.002
Verbs in 1,000 words	.....	.....	.....	−.517	−.543	.285	−.431	−.192	.017
Words per paragraph	.....	.....	.....	.....	.706	−.503	.322	.565	−.356
Words in 75 sentences	.....	.....	.....	.....	.....	−.741	.244	.818	−.399
Simple sentences in 75	.....	.....	.....	.....	.....	.....	.106	.674	.552
Uncommon words in 1,000	.....	.....	.....	.....	.....	.....	.....	.074	.069
Adverbial clauses in 75 sentences	.....	.....	.....	.....	.....	.....	.....	.....	−.424

dren in a given grade could be read and enjoyed by children one grade above or below.

The elements which have a multiple correlation of .845 are as follows: number of different words occurring in a sampling of 1,000 words (X_2), number of prepositions (including duplicates) occurring in 1,000-word sampling (X_3), number of words (including duplicates) in 1,000-word sampling not occurring in Thorndike's list (X_4), and number of simple sentences in 75 sample sentences (X_5).

By making a count of these elements, any teacher can determine the grade placement of any book. The technique used is as follows:

1. Make a sampling of 1,000 words from the book as follows:
   a) Determine the number of pages in the book.
   b) Determine the number of words per line by counting the number of words in ten lines scattered through the book and dividing by 10.
   c) Divide 1,000 (the number of words needed) by the number of words per line. For example, if there are eight words per line, Item *c* will be 1,000 divided by 8, or 125, the number of pages from which sample lines are to be chosen.
   d) Divide the number of pages in the book (for example, 432) by the number of pages from which samples are to be chosen (for example, 125). In the example given, the quotient is 3.5. Therefore, the sample lines will be taken from every third page.
   e) Copy on a separate card (cards cut 2 inches by 3 inches are a convenient size) every word from the top line (or any other given line) of every page to be sampled. Put a *p* in the corner of each card containing a word used as a preposition.
   f) After copying the words from a given line on the number of pages estimated in *c*, count the cards. If there is not an even thousand, discard any excess, or add cards by copying words from additional lines until an exact thousand is reached.
   g) Arrange the cards in strictly alphabetical order so that all duplicates of any given word come together. Eliminate all duplicate cards, writing the total number of such cards on the one card that remains. For example, if there are thirty cards containing the word "the," write the number 30 on one "the" card and discard the other cards containing this word.
2. Count the cards after the duplicates have been eliminated, thus obtaining the number of different words in 1,000. Call this number X_2.
3. Count the total number of prepositions in the 1,000 words. If the preposition "in," for example, occurs fifteen times, it should count as fifteen prepositions. Record the total number of prepositions as X_3.
4. Check each word card with Thorndike's word list. Count the

total number of words, including duplicates, which do not occur in Thorndike's list. In this connection it must be remembered that derived forms of words included in the Thorndike list are considered as being themselves included in the list. For example, the word "sing" occurs in the Thorndike list. The word "singing" would be counted as being included in the Thorndike list although it will not be found there in this form. Thorndike's introduction to his word list should be carefully read to determine which derived forms he has not included. Record the total number of words not included in Thorndike's list as X_4.

5. Make a sampling of seventy-five sentences from the book as follows:
   a) Count the total number of pages in the book, excluding picture pages.
   b) Divide the number of pages in the book by 75 to determine which pages must be chosen. For example, if there are 150 pages in the book, a sentence should be taken from every other page to make up the 75 needed sentences. If there are 250 pages in the book, a sentence should be taken from every third page.
   c) Tabulate as simple or not simple the first complete sentence on every page to be sampled. A simple sentence is defined as one in which there are no dependent or co-ordinate clauses; it therefore contains only one subject and one predicate.
6. Count the number of simple sentences in the 75 sentences sampled. Record this number as X_5.
7. Apply the following regression equation to the data, X_1 being the reading score; X_2, the number of different words in 1,000; X_3, the number of prepositions in 1,000 words; X_4, the number of uncommon words in 1,000; and X_5, the number of simple sentences in 75:

$$X_1 = .085X_2 + .101X_3 + .604X_4 - .411X_5 + 17.43$$

The answer to the equation will be the score on the paragraph-meaning section of the Stanford Achievement Test necessary for

reading the book measured. This reading score may be translated into reading grade according to Table III.

TABLE III

GRADE STANDARDS—PARAGRAPH-MEANING SECTION OF THE STANFORD ACHIEVEMENT TEST

Scores	Grade
4–16	II
18–34	III
36–52	IV
54–62	V
64–70	VI
72–78	VII
80–86	VIII
88–94	IX
96–102	X
104–112	XI

Let us take *The Japanese Empire*[1] by Harry A. Franck as an example of the application of the equation.

Number of different words in 1,000 = 445
Number of prepositions in 1,000 words = 117
Number of uncommon words in 1,000 = 22
Number of simple sentences in 75 = 20
$X_1 = (.085)(445) + (.101)(117) + (.604)(22) - (.411)(20) + 17.43$

The reading score necessary for the ready comprehension of the book is 72.14. As can be seen from Table III, this book is suitable for children whose reading ability is that of the average child at the beginning of Grade VII.

Any book for use in the elementary grades may be similarly analyzed. It is therefore possible to determine the correct grade placement for any book so far as structural difficulty is concerned. When books are so graded and children's reading ability is measured, it is possible to give children books which fit their ability. Furthermore, in writing a book for children in a given grade, an author can check his writing by the regression equation and simplify it if necessary. For the latter purpose Table IV will be found helpful. This

[1] Harry A. Franck, *The Japanese Empire:* A Geographical Reader. Dansville, New York: F. A. Owen Publishing Co., 1927.

table gives the medians and upper and lower quartiles, grade by grade, for each of the four elements measured. If, through the use of the regression equation, the author finds that his material is too difficult for the grade in which it is to be used, he can compare the word and sentence counts with Table IV and see which elements need simplification.

TABLE IV

STANDARDS FOR USE IN WRITING BOOKS FOR CHILDREN

	GRADES					
	III	IV	V	VI	VII	VIII
Number of different words in 1,000:						
Upper quartile	358	401	417	435.5	457.5	460.5
Median	316	377	407.5	416.5	440.5	458
Lower quartile	258	329	386	397.5	411	447
Number of prepositions in 1,000 words:						
Upper quartile	79	106	110	114	116	123
Median	71.5	96	100	107	99	115.5
Lower quartile	65	79	83	100	93	101
Number of uncommon words in 1,000:						
Upper quartile	8	14	20	24.5	34.5	40
Median	6	11	14.5	19.5	26	32.5
Lower quartile	2	6	12	17	18.5	28.5
Number of simple sentences in 75:						
Upper quartile	49	42.5	26	25	29	34
Median	39	30	21.5	19	22.5	26
Lower quartile	36	22	18	11	18	21.5

Since reading is the most basic of all school subjects and since giving children material which is too difficult in structure tends toward wrong methods of visual perception, lack of interest, and faulty understanding and is responsible for many school failures, an objective method of measuring the structural difficulty of reading matter intended for children in the elementary grades is of primary importance.

The present study deals only with structure. A similar study dealing with content is well under way.

THE PLACE OF SCIENCE IN THE JUNIOR HIGH SCHOOL CURRICULUM

S. P. UNZICKER
Roosevelt Junior High School, Fond du Lac, Wisconsin

Two decades ago the average pupil studied physiology and some nature-study in the seventh grade and elected botany or zoölogy or possibly physical geography and physiology in the ninth and tenth grades and chemistry or physics in the eleventh or twelfth grade. However, it was found that only a few of the boys and girls who finished the eighth grade completed the high-school course. Then, too, most of these sciences were elective so that a pupil who graduated need not have taken more than one of them. As a result, many pupils left school without having been introduced to some of the sciences. Furthermore, it was argued that many of the facts and principles taught in the upper high-school grades were not beyond the mental level of the beginning high-school pupil.

About fifteen years ago this challenge was met by a number of men who prepared textbooks in so-called "general" science which were intended for use in the ninth grade. These books differed somewhat in the sequence of material and in the relative emphasis given to the different topics, but the principle was the same. A certain part was devoted to the study of physics, another part to chemistry, still another part to zoölogy, and so on until the major sciences had been treated. If the author happened to be a physicist, he devoted the largest part of his book to a study of physics; if he was a botanist, botany received the major emphasis, the other sciences being very inadequately treated.

In the method of treatment these "general" sciences differed little from the specialized sciences. In practice, certain bodies of material were taken almost wholly from the upper-class specialized courses and placed in the ninth grade as general science. Obviously, these first courses lacked unity; the material was presented with little attention to the psychology of boys and girls thirteen and

fourteen years of age; and there was no uniformity in the matter of the subjects treated during the year.

The writer does not mean to speak disparagingly of the contributions made by the pioneers in the field of science for early adolescents. These pioneers deserve our gratitude and highest praise for having made a start, even though, in view of more recent theory and practice, we now consider their books very unsatisfactory.

With the organization and growth of the junior high school movement, the theory and practice have been to make all branches of instruction extensive and exploratory and to lay the foundation for intelligent election and intensive study in the senior high school. This tendency has affected not only science but the whole curriculum of the seventh, eighth, and ninth grades.

Why should any science be offered in the junior high school? The most generally recognized answer is that the purpose of elementary science is to familiarize the pupil with his everyday surroundings, making them significant to him, and to furnish a common background for the study of the specialized sciences in the senior high school. Any teacher of physics or chemistry or biology knows the great differences in background for their science on the part of different pupils. The junior high school should thus offer science which will not only be significant to the pupils in itself but also build a background for those who expect to continue their science education and establish a point of view and an attitude of mind for all pupils whether or not they go on in science.

This principle implies that the junior high school science should not be excerpts from the highly logical and rather formal senior high school science. Rather, it should be built around the problems of everyday phenomena with which the pupil comes in contact. The solution of any one of these problems may entail the learning of facts or principles which would be taught in several of the specialized sciences. We must constantly keep in mind the fact that pupils are interested, or may become interested, in any number of common phenomena. They are not interested, however, in highly abstract and formal divisions of science.

Where in the junior high school curriculum should science be placed? Should it be postponed to the ninth grade? Is it less im-

portant than are English, mathematics, and the social sciences? When one looks through the programs of study of the leading junior high schools, one finds striking similarity in the amount of time devoted to the subjects mentioned but considerable divergence in the status of science from the standpoint of the year or years in which it is offered, in the number of hours a week devoted to it, and in the matter of making it an elective or a rigid requirement. No science teacher will concede his subject to be second to any other in importance and in value to boys and girls. As a school administrator who is vitally interested in the proper allotment of time to the various subjects, the writer believes it important that as much time be spent in familiarizing a pupil with his physical environment as is spent in teaching any other branch of knowledge.

In the Roosevelt Junior High School, science, including health and physical education, is accorded the same amount of time as is any other major subject. English, mathematics, science, and the social sciences are requirements for all pupils during the three years that they are in the junior high school.

What sciences should be taught and in what sequence? Obviously, we cannot be dogmatic on this point. The writer's experience has taught him, however, that the eighth grade is still the grade of greatest pupil mortality and that the pupils in this grade are the most difficult to interest in school work. For the most part, seventh-grade boys and girls still retain their unquestioning attitude and study what they are given to study. The eighth-grade pupil, especially the boy, has reached the rebellious stage, and school mortality becomes greater than at any other period. The writer has reliable statistical data over a period of years to substantiate this statement in so far as it applies to one city, the boys and girls in which are little different from those in other communities. Therefore, if the junior high school is to develop "holding power," it must make its greatest effort in the eighth grade. This is the grade in which the more spectacular physical and chemical facts should be introduced. Projects should be undertaken which will involve experiments in chemical changes, electricity, and light. Such problems as are found in Hodgden's *Elementary Science* or Pieper and Beauchamp's *Everyday Problems in Science* suggest the type of sci-

ence desirable for the eighth grade. The "difficult" boy who wants to leave school will look forward with keen anticipation to at least one period a day, that at which his science class meets.

Pupils are given health education in the lower grades. It is important that this instruction be continued in the junior high school. Too often it does not receive the emphasis it deserves. The pupil should be made to realize that sanitation and health study are not for grade-school boys and girls only. The eleven-year-old boy entering junior high school feels his importance when he is promoted. It is a momentous occasion in his life. He feels much superior to his brother who is still in the sixth grade. He will accept unquestioned the subjects offered him in the seventh grade, but the school will defeat its purpose if it teaches the same hygiene and sanitation that have been taught in the lower grades. The seventh-grade pupil is mature enough to learn not only health laws but their basis in science. In other words, instead of stressing the laws of health, the school should introduce experiments which will illustrate these principles and provide an elementary scientific background for them. For example, when the pupil studies the sanitation of the home, he can be taught the different types of heating plants and the principles of heat transmission employed in each; and experiments may be performed illustrating these principles. True, he will be getting information taught in physics, but the approach is reversed. In physics he learns heat transmission as a principle and then makes applications by using heating devices as illustrations. In seventh-grade science the so-called "psychological" approach is used; in twelfth-grade science, the logical and formal.

In addition to hygiene and sanitation, the seventh grade should teach nature-study. Such topics as weeds, trees, fruits, insects, stars, and flowers may be taught in the appropriate seasons. Here, again, not only recognition but causes should be taught. In other words, nature-study in the junior high school should be presented as a science.

In Wisconsin physiology must be taught as a requirement somewhere between the ninth and twelfth grades. An ideal place to teach physiology is in connection with biology, for, after having studied various plants and animals from the most simple to the most com-

plex in structure and in intelligence, it is an easy matter to cap the climax by the study of man. However, since biology is usually offered in the tenth grade as an elective, it seems desirable to place physiology in the ninth grade if the state requirement that all pupils study it is to be met. The pupil has acquired sufficient knowledge of physical and chemical phenomena in the seventh and eighth grades to enable him to understand the various physiological processes studied. Physiology is no longer mere rote learning but an interesting study of cause and effect. The pupil is in a position to understand the processes of digestion and respiration. In schools drawing heavily from rural and parochial schools in which physiology is taught in the eighth grade, it is suggested that one semester of the ninth grade be devoted to eighth-grade science and that physiology be taught for only one semester.

No high degree of perfection is claimed for this brief outline of junior high school science. The only contention of the writer is that pupils should be offered three years of science and that these three years should be planned as a unit. Other schools may find a different sequence better suited to their needs. The head of our senior high school science department says that he has noticed a very great difference between the understanding with which our junior high school graduates attack the high-school science and the understanding of pupils of several years ago before our junior high school science was organized. We of the junior high school know that our pupils have a better understanding of nature and of their everyday surroundings than they would have had without their science instruction.

Educational Writings

REVIEWS AND BOOK NOTES

A critical discussion of educational measurements.—Professor Kelley has prepared a very helpful book[1] in his *Interpretation of Educational Measurements*. After two introductory chapters on the history and uses of tests, the author takes up the problems of group and individual measurement with the interpretation of results through the use of appropriate formulas. In the remainder of the book he deals with elementary statistical procedures and gives classified lists of tests evaluated and rated in various ways.

One of the best features of the book is Professor Kelley's critical attitude toward such devices as accomplishment quotients, reliability coefficients, norms, and probable errors. The limitations and correct interpretation of these measures have been set forth very clearly. Another commendable feature is the author's frank acknowledgment regarding the assumptions for certain formulas. Thus, Professor Kelley writes: "The uncertainty of these assumptions necessitates that the conclusions here reached be looked upon merely as first approximations" (p. 200). He also urges experimental verification of his assumptions. This is a most wholesome attitude and, in the opinion of the reviewer, is far more important than an exposition of how to apply the formulas. Indeed, the use of the formulas is probably set forth more clearly in other books, such as those by Ruch and Symonds.

Chapter iv, "The Measurement of Individual Achievement," and chapter v, "The Determination of Individual Idiosyncrasies," are the best in the book, the latter being Professor Kelley's most scholarly writing. His analysis of the problems of individual differences is stimulating and important.

On the negative side, some of the discussion in chapter iv appears to be irrelevant to the sound interpretation of educational measurement. The facts presented are a set of test scores for a number of pupils, together with comments and grades by the principal and teacher. These are put together by the author and discussed by a case method which at times becomes almost fanciful (see case of Clark L., pp. 85–86).

The classified list of tests in chapter x contains a great deal of useful information, and it is hoped that it will be amplified as further data become available.

[1] Truman Lee Kelley, *Interpretation of Educational Measurements*. Yonkers-on-Hudson, New York: World Book Co., 1927. Pp. xiv+364. $2.20.

In chapter ix the author presents ratings as to the excellence of certain tests for individual measurement and diagnosis. These ratings were made by five well-known test experts, but the small number of raters and the difficulty of making such estimates renders the whole list (some 73 pages) of doubtful value. In the opinion of the reviewer, such appraisal should have been made thoroughly or not at all.

Some workers on tests will not agree with many of Professor Kelley's views and methods, but no intelligent reader can fail to find his book helpful and stimulating.

KARL J. HOLZINGER

Professional books on reading.—Since the publication in 1908 of Huey's *The Psychology and Pedagogy of Reading*, more than fifty professional books on reading have been prepared for the use of teachers and supervisors. Most of these books have contained general, logical discussions of the larger problems involved in teaching reading. Within the last few years authors have felt under obligation to treat specific phases of reading in detail or to prepare material for the use of special groups of teachers or of school officers. These tendencies are clearly illustrated in three books which have been published recently.

In *The Improvement of Reading*[1] Gates presents a "detailed account of a system of measuring achievement, diagnosing difficulties, and conducting instruction in reading." The basic principle underlying the teaching procedures which are recommended is that the essential attitudes and habits should be taught in connection with real reading situations. The application of this principle results in what is called "the intrinsic method of teaching reading." This method is in direct contrast to the tendency in some schools to provide an excessive amount of drill in the form of practice exercises.

In order to explain and illustrate this method of teaching, "the desirable reading skills are described by presenting the performances of pupils who have achieved them and by giving the diagnoses of others who have failed to acquire them, together with the improvements brought about by remedial instruction of the new type" (p. vii). As a means of demonstrating the improved system of diagnosis and follow-up instruction, a series of diagnostic tests and examinations are described and methods of interpreting results explained in such a way as to indicate the remedial measures to be used in each case. Throughout the book the author places major emphasis on the diagnostic value of the results of tests and gives detailed directions for remedial measures that are appropriate for important types of reading difficulties.

The book is divided into four main parts. Part I shows the need for a valid program of diagnosis and remedial instruction and describes the general characteristics of such a program. Part II includes a description of a series of diagnostic tests prepared by the author for use in Grades I and II and a discussion of

[1] Arthur I. Gates, *The Improvement of Reading*. New York: Macmillan Co., 1927. Pp. xii+440. $2.00.

remedial measures for deficiencies in paragraph comprehension, in phrase and sentence comprehension, in word recognition, and in the learning of words. Part III is concerned with diagnosis and remedial teaching in the grades above the second. Part IV discusses very helpfully the diagnosis and treatment of cases of extreme reading difficulty or disability.

There are three special values which attach to this book. It presents a comprehensive view of types of remedial cases; it describes simple, objective methods of diagnosis which can readily be used by most teachers; it emphasizes the importance of corrective and remedial measures which fit into a modern program of reading instruction and form an integral part of it. The book should prove valuable to both teachers and supervisors.

Supervision and Teaching of Reading[1] by Harris, Donovan, and Alexander represents a radically different attempt to meet the needs of special groups of workers in the field of reading. One of the unique purposes of the book is to bring within a small compass a large, well-ordered body of reliable material for the use of supervisors, critic teachers, and classroom teachers. The book is divided into two parts. Part One "considers the principles of supervision as applied to reading instruction, suggests the reading campaign as a means of securing better teaching of this subject, and outlines concretely at least one procedure—the demonstration lesson—for improving the teaching of reading"(p. vii). Laudable as the purpose of this part is, its value is seriously limited by the fact that only a relatively small amount of space is given to it. As a consequence, the analysis of supervisory problems is brief and sketchy. The very helpful discussions of a supervisory program and of the demonstration lesson should have been supplemented by equally valuable discussions of scores of other supervisory problems. The fact that this could not be done in a book that discusses teachers' problems in detail suggests that it is probably unwise to attempt to provide for the needs of both teachers and supervisors in the same book.

Part Two represents a very unique effort to provide supervisors and teachers with valuable facts and suggestions relating to specific reading problems that cause difficulty. In order to determine which phases of reading should be discussed, teachers in attendance at the George Peabody College for Teachers during four summer sessions were asked to submit lists of reading problems about which they wished information. When these problems were classified, it was found that they referred to nine major issues, which were expressed briefly as follows: word difficulties, physical difficulties, phonetics, primary reading, reading in the intermediate grades, motivation, individual difficulties, tests and measurements, and materials. In obtaining answers to the specific questions asked, the authors made wide use, first, of the scientific literature relating to reading and, second, of the numerous printed discussions which contain records of experience and suggested procedures. It is evident that this part of the book was well conceived. Many sections are well organized and full of valuable, help-

[1] Julia M. Harris, H. L. Donovan, and Thomas Alexander, *Supervision and Teaching of Reading*. Richmond, Virginia: Johnson Publishing Co., 1927. Pp. xxii+474.

ful suggestions. Other sections are sketchy and somewhat general and fail to give sufficiently comprehensive discussions of the problems. The book will prove of greatest value to those who are in need of information concerning specific problems which frequently cause difficulty.

The Teaching and Supervision of Reading[1] by Gist and King aims "to provide stimulating exercises and suggestions for the busy principal, supervisor, and teacher of reading and to interpret for their uses the various materials, facilities, equipment, and procedures required for the realization of modern objectives in reading" (p. vii). Although the title of the book includes the word "supervision," there are no sections devoted exclusively to the discussion of supervisory problems. The general scope and nature of the content of the book are fairly well suggested by the following chapter titles: "The Varied Programme of Reading," "Reading Objectives and Their Attainment," "Audience Reading," "Silent Reading—Recreatory," "The Teaching of Poetry," "Silent Reading—Work Type," "Silent Reading in the Content Subjects," "Reading Assignments and Recitations," "Seat Work Activities—Descriptions and Evaluations," "Diagnosis and Remedial Teaching," and "Teaching Efficiency."

A distinguishing feature of the book is the fact that it contains a large number of practical, concrete suggestions, which are based on the experiences of the authors in their work in elementary schools. The book does not contain a large number of discussions based on experimental evidence; nevertheless, it will prove helpful in the hands of classroom teachers.

WILLIAM S. GRAY

A survey of present practices and problems in handwriting instruction.—In a recent monograph[2] Professor West, as stated by the editor, "has undertaken a comprehensive and impartial survey of the present status of handwriting instruction in our schools." The survey material consists of replies to a questionnaire. Of 1,575 questionnaires sent out, 439 were returned filled out in whole or in part. These replies were distributed as follows: 134 city supervisors of penmanship, 50 rural teachers, 200 city teachers, and 55 miscellaneous superintendents, principals, and special teachers in school systems where there are no supervisors. The questionnaire, consisting of three mimeographed pages, was designed to secure information on a variety of topics, such as the amount of time devoted to handwriting instruction, the amount and nature of supervision, the training of instructors, the extent to which systems are taught, the aims of instruction, the method and frequency of testing, the use of rhythm, the use of finger movement, hindrances to efficiency in instruction, and the conduct of experiments. The survey material, usually presented in tabular form, is accom-

[1] Arthur S. Gist and William A. King, *The Teaching and Supervision of Reading*. Charles Scribner's Sons, 1927. Pp. xii+338.

[2] Paul V. West, *Changing Practice in Handwriting Instruction:* Suggestions and Discussion Based upon a Survey of Present Practices and Problems. Bloomington, Illinois: Public School Publishing Co., 1927. Pp. vi+142.

panied by a discussion of different practices and by some attempt at evaluation. One of the best features of the book is the list of references which accompanies the discussion.

There is a commendable emphasis from the first on laboratory and classroom experiments. It is refreshing to find explicit recognition of the fact that "the most common practice or the most generally accepted view cannot, of course, be recognized as best practice and theory merely because of its popularity" (p. 1). The last chapter of the book is devoted to a discussion of experimentation in handwriting. In this chapter eighty problems are listed.

The book will be serviceable as a brief orientation in the problems of teaching handwriting. Supervisors, teachers, and others who are interested in present practices and in critical comments on these practices will doubtless find much that is helpful. Certainly, it may be expected that thoughtful persons will find valuable suggestions in the opinions and practices of others. Of course, knowledge of these does not imply their uncritical acceptance. Indeed, they are so varied that it would obviously be impossible to follow all of them. There is much to be said, however, for a book that sets forth divergent practices as a starting-point for discussion and research, as this book does.

While recognizing the merit of the monograph as a critical survey of present practices and as a source of suggestions for research, the reviewer cannot but express a measure of disappointment that a large share of the efforts of educators is going into productions of this kind rather than into experimental study, the need for which is clearly recognized by the author. Perhaps the book itself will stimulate more research than the author alone could possibly undertake. If so, the study will have ample justification. In the judgment of the reviewer, however, surveys in general are receiving far too much emphasis in educational research and fundamental experimentation far too little.

H. T. MANUEL

UNIVERSITY OF TEXAS

A study of agencies for research in the field of education.—A significant report[1] of organized research in the field of education has recently been published by the Bureau of Educational Research of Ohio State University. The monograph not only provides a detailed exhibit of the agencies for educational research in America but also describes similar agencies in Europe and traces the historical development of the research movement in America.

The author credits the school-survey movement with being the forerunner of modern organized agencies for educational research. The first bureau of educational research was established in Baltimore in 1912. From 1912 to 1922 the increase in the number of bureaus was erratic but continuous. Since 1922 the

[1] Harold Benjamin Chapman, *Organized Research in Education with Special Reference to the Bureau of Educational Research.* Bureau of Educational Research Monographs, Number 7. Columbus, Ohio: Ohio State University Press, 1927. Pp. x+222. $1.50.

number of bureaus organized per year has declined. The data for Mr. Chapman's investigation were gathered through the co-operation of sixty-three city bureaus of research, sixteen university bureaus, ten bureaus of state teachers' colleges or normal schools, five state bureaus, and six bureaus of a miscellaneous character. The report describes the nature of the organization of the various bureaus, the personnel, the budgetary provisions, and the principal research projects which have been undertaken. These data as well as others are also treated analytically in order to show the general characteristics and tendencies of research agencies. A typical city bureau of research is described as follows:

> The typical bureau of research in city school systems was established in 1920; it has a staff of four persons, a director, an assistant, a general clerical helper, and a psychologist, if the director is not a psychologist himself. The director received a Bachelor's degree thirteen years ago, and since that time he has procured the Master's degree. He receives a salary of $4,150. For 1925–26 he had a salary budget of $7,800 and an operating budget of $1,500. In the list of functions the director of the median city bureau checked the following items: achievement testing, school finance other than budgeting, curriculum revision, experimental study of curricular and instructional problems, educational guidance, mental testing, psychological clinic, supervision of special classes, training teachers for special testing work, surveys and special investigations, classification of pupils, devising record and report forms, experimental study of special problems relating to administration.
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> During the year ended June 30, 1925, this bureau engaged in the study of seven distinct projects, four of which were special problems of research, and three were routine studies or services. The bureau is responsible to the superintendent of schools. It is expected to recommend policies, and it has a limited amount of responsibility for the execution of approved policies [pp. 210–12].

Three major problems for further consideration are cited in the concluding chapter. These are: (1) What direction is the movement for agencies for research taking? (2) How should a bureau plan a continuous and constructive program as a basis for the selection of problems for study? (3) What criteria may be employed for evaluating the work of a research bureau? The last problem is one to which much thought is undoubtedly being given by the profession. Certain criteria of evaluation are mentioned by Mr. Chapman. Among these criteria are the clarity, accuracy, and usability of the report of findings; the bureau's performance of its service function; the initiative shown by the bureau in discovering and investigating significant problems; the constructiveness of the bureau's activities; the productivity of the bureau; and the extent to which the bureau is able to vitalize the work of school officers and teachers. To the reviewer, one of the outstanding criteria would seem to be the extent to which an organized bureau of research is able to attack fundamental problems in education as distinguished from its ability to perform service functions for the institution or the community from which it derives its support. The obvious service functions which such agencies can perform are so numerous and so pressing that there is undoubtedly a strong tendency to devote the energy of the research staff to such projects whether or not they involve fundamental problems in edu-

cation. Some of the functions listed under the various bureaus of research are obviously service functions rather than research functions. It is imperative that some agencies in the field of education be allowed to attack certain fundamental problems without regard to the immediate service which will eventuate from the investigations or the amount of time that may be necessary to arrive at valid conclusions. Whether this type of fundamental research will emanate from the research bureaus or from the research projects of individuals is a matter which may be watched with great interest.

G. T. BUSWELL

An appraisal of preschool education.—An increasing interest in preschool education has been developing with the increasing recognition of the importance of the preschool years in the formation of character and personality. A critical survey of the present situation and a historical account of the various theories and forms of preschool education are contained in a book[1] which should prove interesting to those whose special interest is the preschool child and to those who wish a general survey of the field.

The book is historical for the most part. The child-study movement is traced, and an account is given of the various forms in which schools for very young children have been organized—kindergarten, day nursery, and nursery school. An interesting section of the book shows how the forms and objectives of preschool education have been molded by the social and moral ideas current in different periods. The historical section describes the contributions of Froebel, Pestalozzi, Rousseau, Montessori, and others. In showing the effects of the writings and teachings of these leaders, the author pays particular attention to the practical implications of their several philosophies. An excellent account is given of the earliest nurseries and nursery schools in Europe and of their subsequent development.

The relation of the nursery school to the home is made the subject of a critical discussion. It is pointed out that, when nurseries do more than look after the physical well-being of the child, they provide advantages which no home, not even the wealthiest, can provide. Consequently, nursery schools should be available for all children, not merely for the children of the poor, as has usually been the case. The rôle of the nursery school in giving training to parents is emphasized.

The book ends with a note of commendable caution. The author does not favor a sudden expansion of nursery schools. Such schools are expensive; trained personnel is not available; and it is not yet certain what results may be obtained. Much more study of the child and his experiences is needed before a widespread program of nursery schools can be undertaken.

R. C. SCARF

BALL TEACHERS COLLEGE
MUNCIE, INDIANA

[1] Ilse Forest, *Preschool Education:* A Historical and Critical Study. New York: Macmillan Co., 1927. Pp. xiv+414.

A questionnaire investigation of play activities.—It is interesting to note the relatively large number of significant problems attacked in Doctors' dissertations in education. In most fields the Doctor's thesis is not of sufficiently general interest to attract a sale large enough to defray the cost of publication. However, in the field of education, a considerable number of such investigations made during the past few years have been published by commercial houses. *The Psychology of Play Activities*[1] consists very largely in data collected by the senior author for his Doctor's dissertation; the data were later interpreted more fully, and the thesis was re-written for educational workers interested in the problem of play activities.

The purpose of the investigation was to discover (1) the games and other play activities most commonly engaged in by persons from five to twenty-two years of age residing in certain communities; (2) the games and other play activities these individuals liked best; (3) the games and other play activities to which these individuals thought they had devoted the largest amount of time; and (4) the effect on play behavior of such variables as age, sex, race, season, intelligence, and community. The authors consider as play those behavior manifestations which individuals exhibit "just because they want to." Children in the third grade and above were asked to check in a list of two hundred play activities those in which they had engaged of their own volition during the week preceding the investigation. Each child was also asked to indicate the three activities which had given him the most fun or which he liked the best; he was, in addition, requested to name the one activity to which he thought he had given the most time. In one investigation the children were asked to identify those play activities in which they had participated alone. The play activities of children below the third grade were ascertained by asking them to name the five things they liked best to do at home and their five favorite school activities.

Four chapters are devoted to a brief historical treatment of changing attitudes toward play, theories explaining play, techniques previously employed in studying play behavior, and a statement of the method used by the authors. The other eleven chapters of the book, with the exception of the last one, which discusses play in relation to educational and vocational guidance, present data secured in a series of investigations including more than fourteen thousand different individuals. Play behavior is analyzed from the following angles in terms of detailed data: general age growth, preferences of children below the third grade, sex differences, differences between town and country children, differences between negro and white children, the influence of certain variables (year-to-year changes, prevailing local fashions in play, home training, and playground space and equipment), individual differences, seasonal variations, school progress, and intelligence.

The last chapter makes a strong plea for a consideration of the play activ-

[1] Harvey C. Lehman and Paul A. Witty, *The Psychology of Play Activities*. New York: A. S. Barnes & Co., 1927. Pp. xviii+242. $2.00.

ities of children in programs of educational and vocational guidance and in curriculum construction. The Lehman Play Quiz is suggested as an instrument for use in determining the play activities actually engaged in by children of a given community. Even though it is not at all certain that children confronted with a list of two hundred play activities will recall accurately those in which they have engaged during the preceding week, the procedure suggested by the authors is probably the most satisfactory method available. Direct observation on the part of the investigator or teacher would be too laborious and time-consuming for ordinary purposes and would not eliminate entirely the subjective element.

The authors have previously published much of the data included in the present book. However, it is well worth while to bring together the several investigations in a unified whole. The data are presented in forty-one figures and seventy-four tables. Students of education, school administrators, supervisors, teachers, playground directors, instructors in physical education, scout masters, and others who come in contact with the play activities of children will be interested in the book, although certain of the groups named may not care to analyze the detailed data presented.

CARTER V. GOOD

MIAMI UNIVERSITY

Research contributions to commercial education.—The research investigations reported at the first Iowa Research Conference on Commercial Education are available in bulletin form[1] through the co-operation of the College of Education and the College of Commerce of the State University of Iowa. The reports are complete in every detail as they were given by the speakers.

The sections entitled, "Solved and Unsolved Problems in Commercial Education" and "Commercial Education in Rural Communities," contain the findings of some of the studies made by the Federal Board for Vocational Education and by the Bureau of Education. Reports of investigations in tests and measurements and in methods of teaching three of the traditional commercial subjects contain the findings to date of such studies as the possibility of prognosis in stenography, unit measurement in shorthand, and the direct method of teaching shorthand; how progress in learning to typewrite should be measured, a correlation study of proficiency in typewriting, and an experiment with the Miller dictaphone method of teaching typewriting; and job analysis in bookkeeping and some problems of measurement in bookkeeping.

The significance of this conference on research studies in commercial education cannot be overestimated. No previous meeting of scientific students of commercial education or of scientific students in fields related to commercial education had ever been held for the purpose of disseminating and evaluating the contributions of research to commercial education.

[1] E. G. Blackstone, *Research Studies in Commercial Education*. University of Iowa Monographs in Education, First Series, No. 7. Iowa City, Iowa: University of Iowa, 1926. Pp. 160. $0.50.

Not only is commercial education not on a scientific basis commensurate with its numerical and economic importance, but research in commercial education is not abreast either in range or in depth with research in other fields of education. However, the pressure of numbers, the demands of employers and of parents, a growing consciousness of inadequate training, and a rising demand for efficiency are serving to quicken a feeling of the need for research, a willingness to foster it, and a desire to participate in it.

From the proposed series of conferences, it is hoped that closer contacts may be established among investigators who have made research contributions to commercial education, teachers who are interested in such contributions, and students in preparation for commercial teaching to the end that training for the essential business activities of everyday life and training for business occupations may steadily be improved.

ANN BREWINGTON

Books for the teacher of physical education.—Teachers and directors of physical education will be interested in four recent books which deal with various aspects of their work. One[1] of these, by Wilbur P. Bowen, a professor of physical education in the Michigan State Normal College, gives a general treatment of the conduct of physical education in the elementary grades and in the high school. The first three chapters present the aims and values of physical education and discuss methods of stimulating interest. The remaining part of the book is devoted to a concrete presentation of methods of conducting physical activities. The author has not attempted to supply material in his book but has attempted to present the technique of using material. The book deals with a complete physical-education program for the public schools. It may be used as a textbook in normal-school classes in physical training.

A second book,[2] by Leonora Andersen, presents an athletic program for elementary schools arranged according to the seasons of the year and classified according to school grade. This book is really a handbook for play directors. It consists, for the most part, of detailed descriptions of various physical activities and games, giving diagrams of the playing field, rules for the games, and various comments on the values of the activities. The last chapter gives a series of tables of standards of accomplishment, based on the results of tests given to fifteen hundred children. These standards will be very useful to the play director in determining the quality of pupils' performance.

A third book[3] deals with methods of teaching swimming. The various strokes and positions are carefully analyzed and illustrated. The detailed character of the analyses indicates the progress which has been made in the technique of teaching

[1] Wilbur P. Bowen, *The Conduct of Physical Activities in Elementary and High Schools*. New York: A. S. Barnes & Co., 1927. Pp. 174. $2.00.

[2] Leonora Andersen, *An Athletic Program for Elementary Schools*. New York: A. S. Barnes & Co., 1927. Pp. x+134. $2.00.

[3] Lyba Sheffield and Nita Sheffield, *Swimming Simplified*. New York: A. S. Barnes & Co., 1927. Pp. xiv+298. $2.00.

swimming as compared with the old "sink-or-swim" method. In addition to the material on methods of swimming, there are chapters on children's swimming, managing a swimming meet, life-saving, and water sports and a brief final chapter on principles of teaching.

The fourth book[1] in this series deals entirely with calisthenics drills. Having directed physical training in one of the war camps, the author has seen the need of a more precise formulation of methods of teaching calisthenics and has written this book as a result. This, too, is a detailed handbook of directions to be used by the physical-training instructor. A new method of teaching calisthenics, the result of two years of experimentation in the University of Illinois, is described and recommended. In view of the fact that calisthenics is the most common single method of physical exercise, the book should produce real improvement in the field of physical training.

Children's poems.—Two books of poems for children will be of interest to teachers of reading. One[2] of these books is an anthology of poetry written by children between the ages of four and eighteen. The poems are presented in five sections, classified according to the ages of the authors. They will be interesting not only to the teacher of English but also to the educational psychologist, who will find in them considerable evidence as to the interests of children at various levels of growth. The editor comments as follows on some of the characteristics of the children's contributions:

> The limitation of children's poetry is not in respect to quality but in range of subject, on account of the limited interests and experiences of childhood. Their emotions are most frequently stirred by music, nature, and family ties; so the subjects they choose are home scenes, parents (especially the mother), trees, flowers, animals (particularly birds), brooks, rivers, mountains, the sea, and the change of seasons. Among the poems submitted, there were enough on the moon alone for a lunar anthology, but, unfortunately, most of them were of such quality that they had to be omitted for fear of an eclipse.
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> Humor, scarce enough as it is among older writers, is still more rare among children, who seem to grow serious when they set to work to put their ideas on paper.
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> In adolescence the same subjects are treated as in childhood, but the older children have an additional interest in the problems that arise from a broader outlook on life; therefore, their poems reveal more self-analysis and more questioning of the writer's relation to the world and to God [pp. ix–x].

The second book[3] consists in a collection of poems for children classified under such topics as "The Home," "In the Country," "In the Town," the four

[1] S. C. Staley, *Calisthenics:* Modern Methods of Free-Exercise Instruction. New York: A. S. Barnes & Co., 1926. Pp. 338. $3.00.

[2] *Singing Youth:* An Anthology of Poems by Children. Edited by Mabel Mountsier. New York: Harper & Bros., 1927. Pp. xxvi+216. $2.50.

[3] *Poems for the Children's Hour.* Compiled by Josephine Bouton. Springfield, Massachusetts: Milton Bradley Co., 1927. Pp. xxii+364. $1.75.

seasons, and the various holidays. Three criteria were used in the selection of poems: first, they must meet the natural, everyday interests of the child; second, they must combine both the old and the new; and, third, they must be short. The result of applying these criteria is a book of poems which children will enjoy. The book is not illustrated.

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

ADAMS, SIR JOHN *Errors in School:* Their Causes and Treatment. Boston: Houghton Mifflin Co. Pp. viii+326. $2.50.

ALBERTY, H. B. *A Study of the Project Method in Education.* Contributions in Principles of Education, Number 2. Columbus, Ohio: Ohio State University Press, 1927. Pp. vi+112.

BENDER, JOHN FREDERICK. *The Functions of Courts in Enforcing School Attendance Laws.* Teachers College Contributions to Education, No. 262. New York: Teachers College, Columbia University, 1927. Pp. vi+188. $1.50.

CARR, JOHN W., JR. *Factors Affecting Distribution of Trained Teachers among Rural White Elementary Schools of North Carolina.* Teachers College Contributions to Education, No. 269. New York: Teachers College, Columbia University, 1927. Pp. vi+92. $1.50.

CHAPMAN, HAROLD BENJAMIN. *Organized Research in Education with Special Reference to the Bureau of Educational Research.* Bureau of Educational Research Monographs, Number 7. Columbus, Ohio: Ohio State University Press, 1927. Pp. x+222. $1.50.

The Correspondence of John Locke and Edward Clarke. Edited, with a biographical study, by Benjamin Rand. Cambridge, Massachusetts: Harvard University Press, 1927. Pp. xvi+608.

CORYELL, NANCY GILLMORE. *An Evaluation of Extensive and Intensive Teaching of Literature:* A Year's Experiment in the Eleventh Grade. Teachers College Contributions to Education, No. 275. New York: Teachers College, Columbia University, 1927. Pp. viii+202. $1.50.

CRAIG, GERALD S. *Certain Techniques Used in Developing a Course of Study in Science for the Horace Mann Elementary School.* Teachers College Contributions to Education, No. 276. New York: Teachers College, Columbia University, 1927. Pp. viii+74. $1.50.

DOLCH, EDWARD WILLIAM. *Reading and Word Meanings.* Boston: Ginn & Co., 1927. Pp. vi+130. $1.36.

HOCKETT, JOHN A. *A Determination of the Major Social Problems of American Life.* Teachers College Contributions to Education, No. 281. New York: Teachers College, Columbia University, 1927. Pp. vi+102. $1.50.

HOCKETT, RUTH M. *Visitors in an Experimental School:* A Study of Possible Values in School Visiting, with Particular Reference to the Visiting Problems of the Lincoln School. New York: Teachers College, Columbia University, 1927. Pp. viii+102.

JOHNSON, WILLIAM H. *Fundamentals in Visual Instruction.* Chicago: Educational Screen, Inc., 1927. Pp. 104.

Renaissance Student Life: The Paedologia of Petrus Mosellanus. Translated from the Latin by Robert Francis Seybolt. Urbana, Illinois: University of Illinois Press, 1927. Pp. xx+100. $1.25.

ROGERS, FREDERICK RAND. *Tests and Measurement Programs in the Redirection of Physical Education.* New York: Teachers College, Columbia University, 1927. Pp. xx+166.

SNEDDEN, DAVID. *Foundations of Curricula:* Sociological Analyses. New York: Teachers College, Columbia University, 1927. Pp. 196.

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